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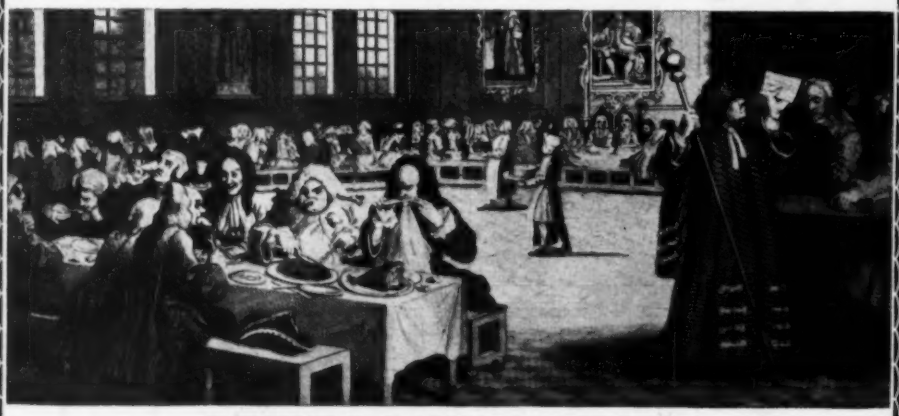

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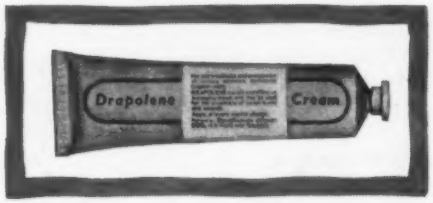

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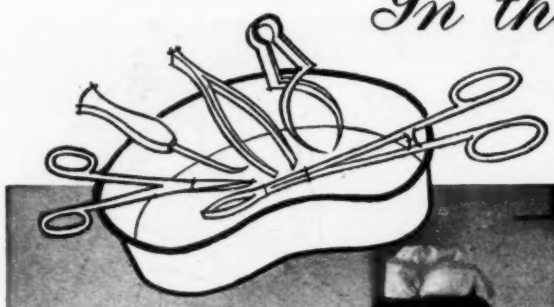

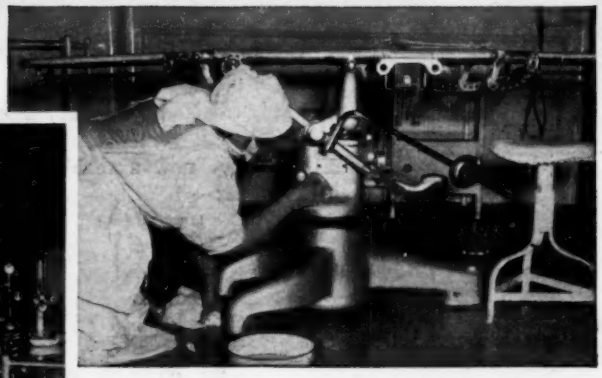

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BACTERICIDE AND DETERGENT

IMPERIAL CHEMICAL (PHARMACEUTICALS) LTD.

A subsidiary company of Imperial Chemical Industries Limited

WILMSLOW MANCHESTER

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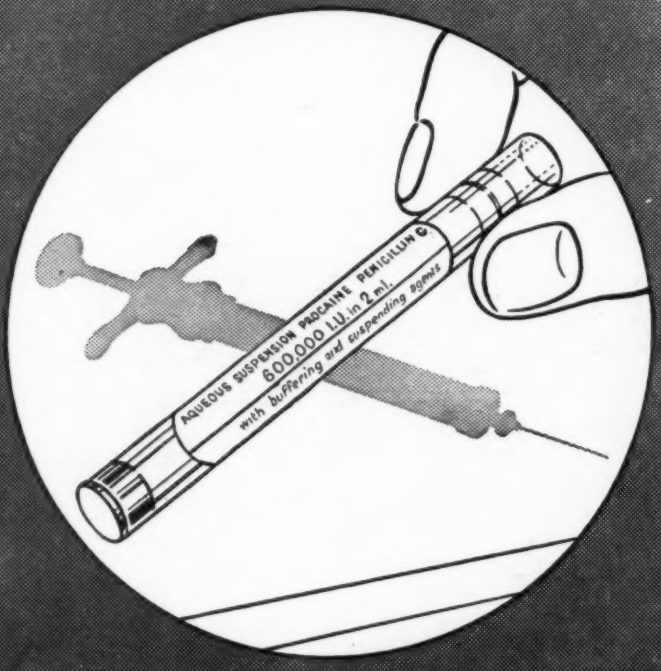
Ph.524

9

THIS MODERN INJECTION TECHNIQUE

saves time and money



'Viules' reduce sterilization procedures to a minimum.

Does away with ampoule-filing.

With 'Viules' there is no transfer of solution to syringe.

No syringe breakage.

'VIULES' contain pre-measured doses of stable, sterile injections ready for immediate use in any suitable cartridge syringe. They offer simplicity, speed, efficiency, accuracy and economy in every branch of medicine.

Among the drugs now available are the following, in a range of convenient doses:—

ADRENALINE	LIVER EXTRACT	NIKETHAMIDE	PROGESTERONE
ATROPINE	LOBELINE	PAPAVERETUM & SCOPOLAMINE	PROCAINE PENICILLIN Aqueous and Oily Suspension
BISMUTH OXYCHLORIDE	METHADONE	PETHIDINE	STREPTOMYCIN
DIAMORPHINE	MORPHINE	PHENOBARBITONE SODIUM	TESTOSTERONE
ERGOMETRINE	MORPHINE & ATROPINE	PROCAINE & ADRENALINE	VITAMIN B12
HYOSCINE			

'VIULES'

single-dose injections in disposable cartridges

Full details will be gladly sent on request.

The Medical Department

BOOTS PURE DRUG COMPANY LIMITED NOTTINGHAM

8213

EASILY ASSIMILATED IRON

For hypochromic anaemia in all ages and conditions, particularly in pregnancy, childhood, adolescence and advancing age, Ferraplex B provides easily assimilated iron supplemented, for maximum haematinic effect, with copper, vitamin C and complete vitamin B complex. Side effects such as gastro-intestinal disturbances are rare.

Available in bottles of 50 and 250 tablets.
Basic N.H.S. cost of 250 tablets, 15/6d.
Average daily cost of treatment, 4½d.

The recommended daily dose of six FERRAPLEX B *tablets contains:—*

Ferrous sulphate exsicc., B.P. .....1 gramme
Copper carbonate .....2 mg.
Ascorbic acid (Vitamin C) .....50 mg.
Natural vitamin B complex extract .....2 grammes
prepared from Brewers' Yeast and including
Aneurine hydrochloride.....3 mg.
Riboflavine .....6 mg.
Nicotinamide .....30 mg.
and pantothenic acid, pyridoxine, folic acid, choline, inositol, biotin, para-aminobenzoic acid and other naturally occurring factors of the vitamin B complex.

FERRAPLEX B

BENCARD

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SQUIBB

DISSEMINATED SCLEROSIS

PARAPLEGIA

HEMIPLEGIA

RHEUMATIC DISORDERS

CHOREO-ATHETOSIS

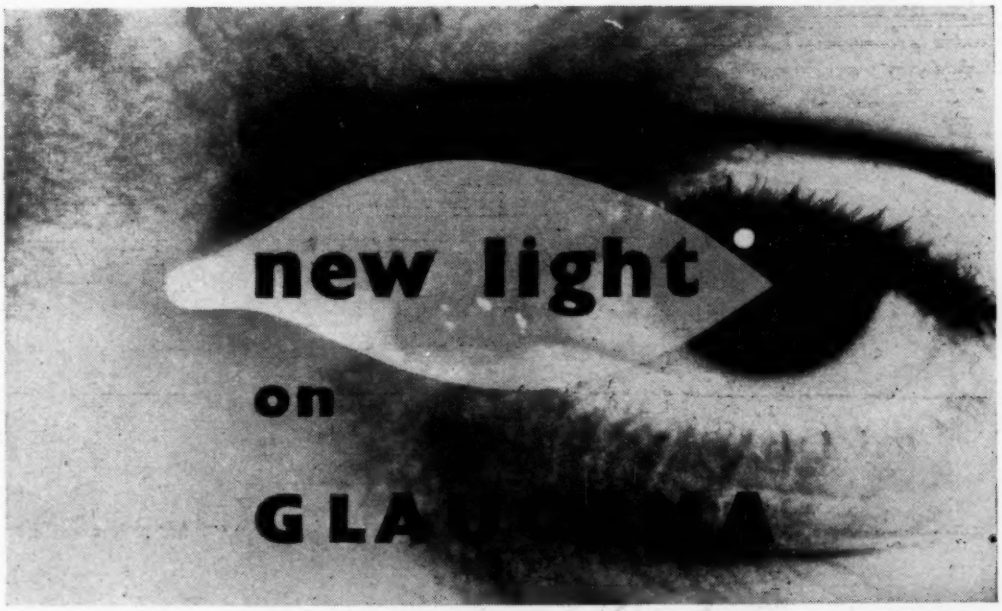
TOLSERAM

Mephenesin Carbamate—Squibb

The green colouring material will be omitted from Tolseram tablets in the near future. Hitherto, the tablets have been coloured green to distinguish them from Tolserol (mephenesin) tablets, but it has been shown, both clinically and pharmacologically, that Tolseram is superior to mephenesin in every respect. For this reason, the manufacture of Tolserol (mephenesin) tablets will be discontinued in due course, and the distinguishing colour of Tolseram tablets will become unnecessary.

E. R. SQUIBB & SONS, 17-18 OLD BOND STREET, LONDON, W.1. HYDE PARK 1733

12



Pronounced decrease in intraocular pressure follows oral administration of DIAMOX Acetazoleamide to glaucomatous patients.

This significant finding has been made in numerous clinical trials—and to-day there remains no doubt that DIAMOX has an important role to play in the treatment of many forms of glaucoma. A powerful inhibitor of carbonic anhydrase, DIAMOX acts in the eye by inhibiting the formation of the aqueous humour—i.e., the inflow.

DIAMOX fulfils two vitally important functions. Firstly, by lowering intraocular tension, the drug enables miosis to be achieved—either spontaneously or by the use of miotics previously ineffective ; the angle is thus unblocked and drainage can occur. Secondly, DIAMOX does much to lessen the degree of urgency in treating closed-angle glaucoma and greatly improves the prospects of successful surgical intervention. It is in acute angle-closure glaucoma, however, that DIAMOX gives particularly impressive results, and in at least some cases the angle-closure is reversible.

DIAMOX* ACETAZOLEAMIDE *Lederle*

Packing: Scored tablets of 250 mg. Bottles of 25 and 100 tablets.

Literature on request

* Regd. Trade-Mark

Lederle

LEDERLE LABORATORIES DIVISION

Cyanamid Products Ltd. BUSH HOUSE, LONDON, W.C.2 TEMPLE BAR 5411

Sleep... the healer

NO single barbiturate combines rapid onset with a duration of action sufficient to ensure a whole night's restful sleep. Carbrital capsules, however, contain pentobarbitone sodium (a quick acting barbiturate) and carbromal (a mild sedative). This, plus the fact that there are little or no after-effects, makes Carbrital ideal for all types of insomnia and for use as a general sedative.

CARBRITAL

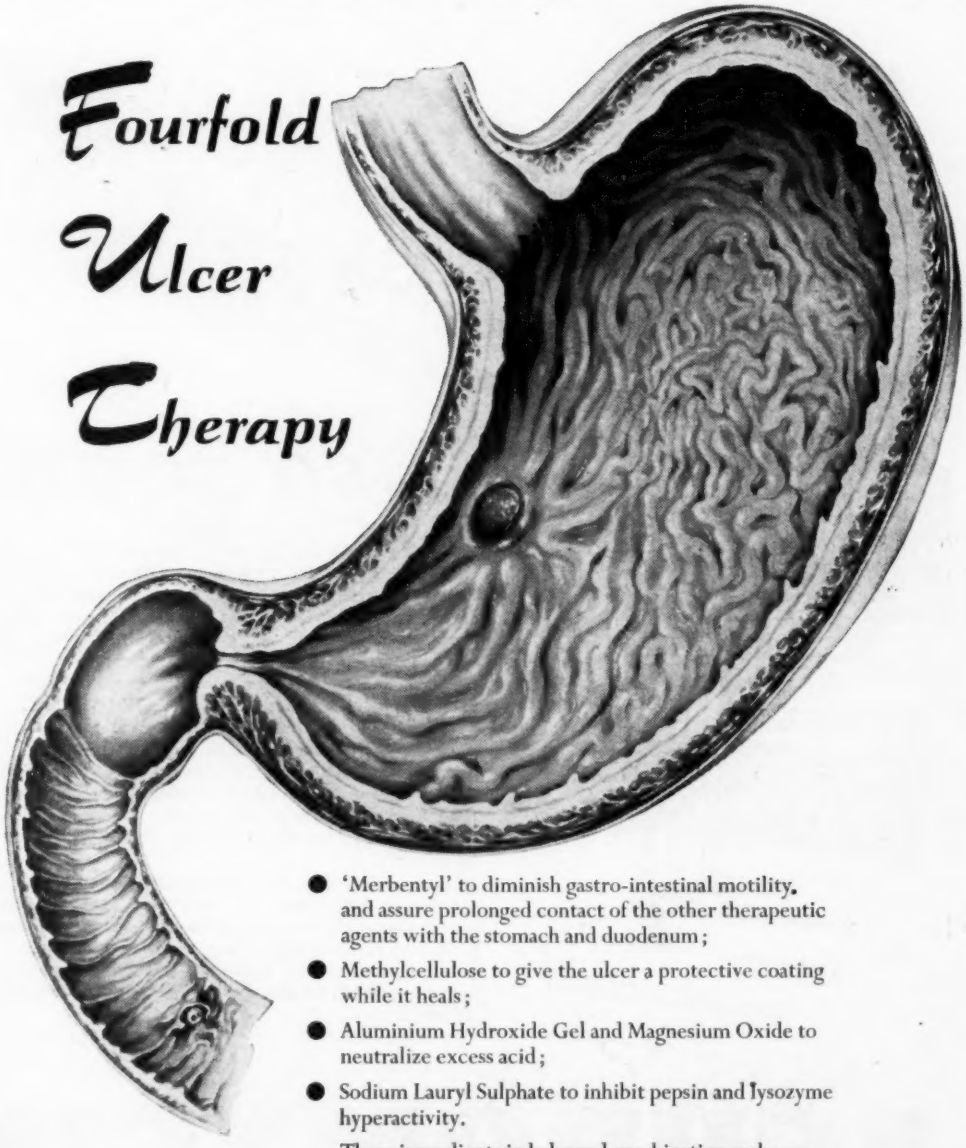
for all types of insomnia

available in bottles of 25 and 250 capsules

Parke, Davis & Company, Limited *Inc. U.S.A.* Hounslow, Middx. Tel. Hounslow 2361

94
14

Fourfold Ulcer Therapy



- 'Merbentyl' to diminish gastro-intestinal motility, and assure prolonged contact of the other therapeutic agents with the stomach and duodenum;
- Methylcellulose to give the ulcer a protective coating while it heals;
- Aluminium Hydroxide Gel and Magnesium Oxide to neutralize excess acid;
- Sodium Lauryl Sulphate to inhibit pepsin and lysozyme hyperactivity.

These ingredients in balanced combination make up the new and highly effective peptic ulcer medicament.

Each tablet contains:—

'Merbentyl' (diethylaminocarbethoxybicyclohexyl hydrochloride)	5 mg.
Aluminium Hydroxide Gel	400 mg.
Magnesium Oxide	200 mg.
Sodium Lauryl Sulphate	25 mg.
Methylcellulose	100 mg.

Bottles of 50 and 250 tablets.

KOLANTYL

REGD

distributed in the United Kingdom & Eire by
RIKER LABORATORIES LIMITED, LOUGHBOROUGH, LEICS.
for the Wm. S. Merrell Company, London.

Merrell research

...so soon?

Yes, he's "back on his feet" already—he was treated with ACHROMYCIN tetracycline. This newest Lederle broad-spectrum antibiotic is certainly proving remarkably successful in shortening the course of many commonly seen infections; and, very frequently, only *oral* treatment is needed.

Particularly convenient, both for patient and physician, are the capsule and tablet forms of ACHROMYCIN. Being highly soluble, the antibiotic is swiftly absorbed from the gastrointestinal tract and high concentrations are quickly produced in the blood and tissues. Yet despite its dramatic striking power, ACHROMYCIN is unsurpassed in its freedom from undesirable side effects. These are not only rarer but also milder than with other broad-spectrum antibiotics.

Average adult dosage is 1 GRAM DAILY in divided doses—and the indications for the new antibiotic include numerous infections of bacterial, rickettsial, viral-like and protozoan origin. Here, then, is an antibiotic which well merits a place in *your* practice. It means greater comfort for the patient, swifter response and true economy in prescribing.

ACHROMYCIN*

TETRACYCLINE

CAPSULES AND TABLETS

Capsules 50 mg.—Vials of 25 and 100.
250 mg.—Vials of 16 and bottles of 100.
Tablets 50 mg.—Vials of 25 and 100.
250 mg.—Vials of 16 and bottles of 100.

ACHROMYCIN a true broad-spectrum antibiotic

Available also in the following forms: Intramuscular · Intravenous · Ointment · Ophthalmic Ointment · Oral Suspension · Pediatric Drops · Soluble Tablets · SPERSOIDS‡ Dispersible Powder.

*Regd. Trade-Mark ‡Trade-Mark

LEDERLE LABORATORIES DIVISION Lederle

Cyanamid Products Ltd. BUSH HOUSE, ALDWYCH, LONDON W.C.2 TEMPLE BAR 5411

Unique in the field

Relief of pain

Inhibition of Hypermotility

Relief of spasm

and FREEDOM FROM SIDE EFFECTS

the new spasmolytic

BUSCOPAN

HYOSCINE-N-BUTYLBROMIDE Regd

FOR ORAL AND PARENTERAL THERAPY

ampoules of 0.02 Gm. • tablets of 0.01 Gm.

Manufactured in England by PFIZER CORPORATION as registered user for
C. H. BOEHRINGER SOHN · INGELHEIM AM RHEIN
(Registered Proprietors of the Trade Mark)
Distributed by PFIZER LIMITED · FOLKESTONE

in interference with absorption or metabolism...

as from
GASTRECTOMY

SEVERE TOXIC INFECTIONS

TREATMENT WITH ANTIBIOTICS

EXCESSIVE CONSUMPTION OF ALCOHOL OR BARBITURATES

B COMPLEX

BECOVITE
for INTENSIVE *therapy*

BEFORTISS
for MAINTENANCE *therapy*

Although malnutrition, extreme enough to produce the classical syndrome of vitamin B-complex deficiency, rarely occurs in present-day practice in this country, it is not uncommon for symptoms of varying seriousness to arise referable to interference with absorption or metabolism from, for example gastrectomy, severe toxic infections, excessive consumption of alcohol or barbiturates, or from treatment with some of the antibiotics.

In all such cases, suitable preparations for the necessary B-complex therapy—intensive and/or maintenance—will be found in the Becovite and Befortiss range, in forms precisely adaptable to the convenience and preferences of doctor and patient.

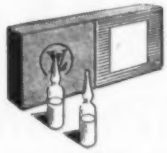
For intensive therapy:— **BECOVITE:** Tablets, 2 c.c. Ampoules, Elixir
For maintenance therapy:— **BEFORTISS:** Tablets, 1 c.c. Ampoules, Elixir

FULL DETAILS OF PACKS AND PRICES ON REQUEST ALL PRESCRIBABLE ON THE N.H.S.

PARENTROVITE

for the treatment of Neuroses and Psychoses

An injectable preparation of B vitamins and vitamin C in high concentration.



In Boxes of 3 pairs of ampoules
Hospital Packs also available

OMNIVITE FORTE

for continuation treatment of the alcohol addict

Tablets containing all the vitamins needed to restore deranged metabolic processes.

In packs of 25 and 100 tablets

VITAMINS LIMITED UPPER MALL, LONDON, W.6.

EVANS
MEDICAL

COLLIRON

One of a complete range of

Iron Preparations

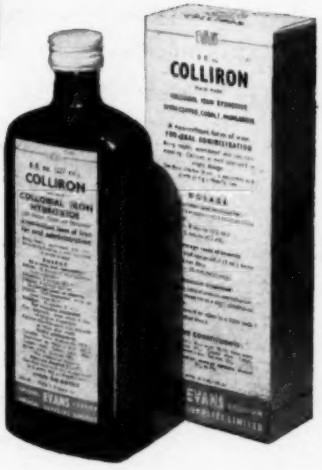
Many oral iron preparations cause gastro-intestinal irritation thereby making it impossible to administer sufficient iron by the oral route to restore the hæmoglobin level to normal. Colloidal ferric hydroxide in the form of COLLIRON overcomes this great disadvantage, as the iron is presented in a non-irritant form and is readily tolerated even in large dosage over a prolonged period.

OUTSTANDING ADVANTAGES OF COLLIRON

1. *Pleasant to take*
2. *Well tolerated*
3. *Efficient utilization*
4. *Does not stain the teeth*
5. *Particularly suitable for children to whom it can easily be administered by means of a special dropper bottle.*

Presentation

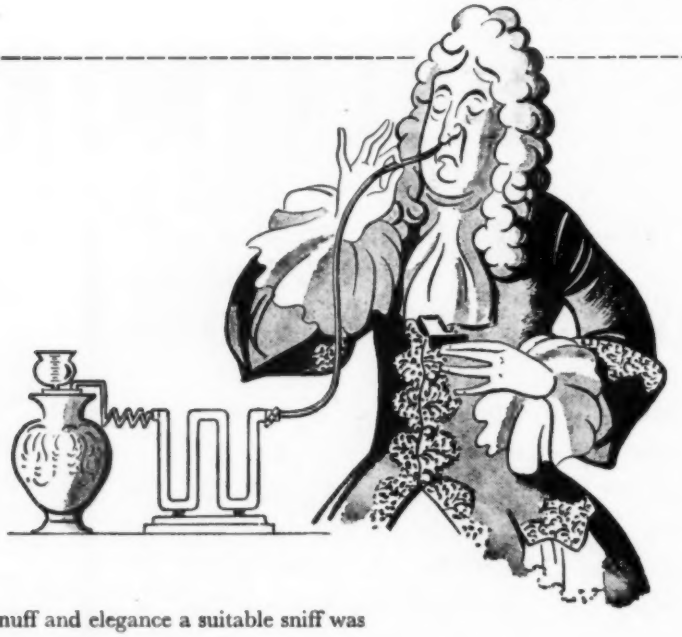
Bottles of 4 fl. oz. and 8 fl. oz.
Dropper bottles of 30 ml.
COLLIRON is also available in capsules
If rapid response to iron therapy is needed
COLLIRON I.V. is unexcelled.



COLLIRON

Further information on request from : **EVANS MEDICAL SUPPLIES LIMITED,**
Speke, Liverpool 19, and Ruislip, Middlesex

THE GENTLE ART OF *Sniffing*



In the age of snuff and elegance a suitable sniff was part of every gentleman's social equipment. Nowadays the art has declined until its continued existence depends entirely upon the efforts of a body of comparatively ineffective, albeit enthusiastic, amateurs.

In order to retain at least some remnant of the more spacious days of the past, our technicians constructed a machine. With its aid even the most subtle sniffs can be captured, measured, and classified, and the volume of the average sniff determined. Thus it is that one of the nicest sniffs, the once-an-hour decongestive sniff, is standardised to a startling degree for the benefit of those who use the . . .

Benzedrine INHALER

For cost to N.H.S., see M. & J. list of costs dated May, 1955

SMITH KLINE & FRENCH INTERNATIONAL CO.

represented by **Henley & James, Ltd.**, Coldharbour Lane, London, S.E.5

Tel: BRIxton 7851

'Benzedrine' is a registered trade mark

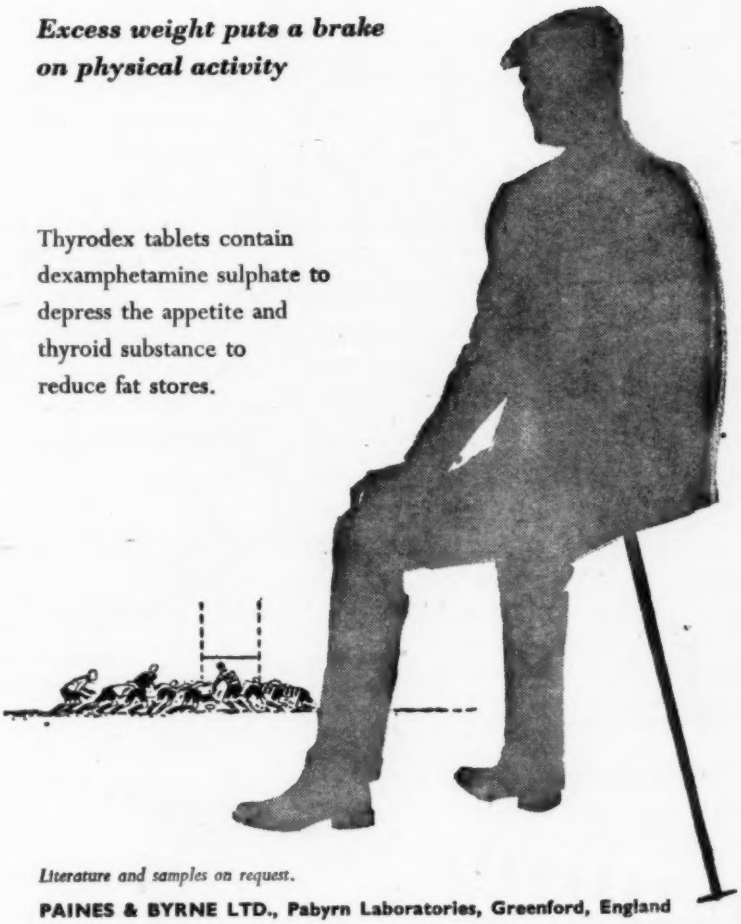
A well-proved formula

THYRODEX

TABLETS

Excess weight puts a brake on physical activity

Thyrodex tablets contain dexamphetamine sulphate to depress the appetite and thyroid substance to reduce fat stores.



Literature and samples on request.

PAINES & BYRNE LTD., Pabyrn Laboratories, Greenford, England

FOR PATIENTS SUFFERING FROM PRURITUS...

EURAX GEIGY

REGD. TRADE MARK

OINTMENT

CONTAINING 10% CROTONYL-N-ETHYL-*o*-TOLUIDIDE IN A NON-GREASY BASE

The use of EURAX in treating patients suffering from pruritus of varying origin is reported on most favourably. One report (*Brit. J. Dermatol.*, 1952, 64, 408) describes the complete disappearance of irritation in 34% of 200 cases, the effect generally lasting for at least 8 hours. A further 31% of the 200 were relieved of itching for a shorter period, while 22% experienced only moderate relief. Only 13% received no benefit at all. In 115 patients in whom the antipruritic effect of EURAX was compared with other remedies, more than 75% showed preference for EURAX.

***PROMPT RELIEF *PROLONGED EFFECT**

Available in 1 and 4 oz. tubes and in 1 lb. jars.

Prescribable on N.H.S Form E.C.10.

Technical literature on request.

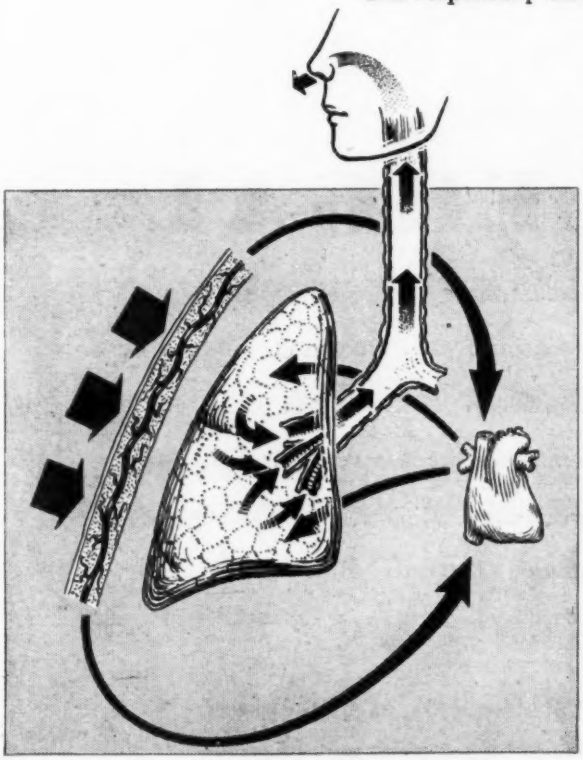
GEIGY PHARMACEUTICAL COMPANY LTD.

Rhodes, Middleton, MANCHESTER

PH.70

A NEW ADJUVANT IN THE TREATMENT OF RESPIRATORY DISORDERS

Lloyd-Hamol Ltd., of London and Zurich, presents to the medical profession a new decongestive salve, Thoracin, for the symptomatic relief of coughs, colds and respiratory disorders.



This diagram shows how Thoracin components penetrate the skin, are carried by the bloodstream to the alveoli and excreted there to exert their effect.

FORMULA

Phenyl Ethyl Nicotinate	2.0% w/w
Guaiacol Furoate	5.0% w/w
Tetrahydrofurfuryl Salicylate	10.0% w/w
Camphor	3.0% w/w
Eucalyptol	2.0% w/w
Water-Miscible Base to	100.0%

▶ The Thoracin formula is based on the same principles that have made Transvasin so successful in the treatment of rheumatic conditions.

▶ Thoracin is composed of esters of substituted hydroxy aromatic derivatives.

▶ Thoracin achieves the effect of the classic counter-irritant remedies — poultices, plasters and cupping — without irritation of the skin.

▶ Thoracin contains a new ester of Guaiacol that is entirely free from the evil smell and irritant effect associated with this phenol derivative in its pure form. This ester easily penetrates the skin, and is excreted in the alveoli, where it exerts its well-known action.

▶ Thoracin ensures vasodilation of the superficial skin vessels by the use of esters of nicotinic acid.

▶ Thoracin relieves reflex spasm of the pectoral muscles by the use of the tetrahydrofurfuryl-ester of salicylic acid.

▶ Thoracin brings to the alveoli via the blood stream the sedative, antispasmodic, and expectorant properties of camphor and eucalyptus.

THORACIN is available in 1 oz. tubes — basic price 2/6 plus 7½d. P.T. It is an ethical product, and is not advertised to the public. Since a very small quantity is sufficient for each application, the cost of treatment is extremely low. *Samples and literature will be gladly sent on application.*

LLOYD-HAMOL LTD.
11 WATERLOO PLACE, LONDON S.W.1
AND AT ZURICH

Thoracin is the registered trade mark of Lloyd-Hamol Ltd.

THORACIN

MADE BY THE MANUFACTURERS OF TRANSVASIN

In Pink Disease . . .

symptoms of imbalance of the autonomic nervous system prevail, such as sweating, tachycardia, hypertension, photophobia, sleeplessness, etc. . . . .

Treatment with

BELLERGAL

a sedative of the autonomic nervous system, considerably shortens the course of the illness; sweating is first alleviated, followed by rapid cessation of desquamation and disappearance of erythematous eruptions. Sleep and appetite are restored. Each Bellergal tablet contains 0·1 mg. Bellafoline (L–alkaloids of Belladonna leaves), 0·3 mg. Ergotamine Tartrate B.P. and 20 mg. Phenobarbitone B.P.

DOSAGE: From 2 tablets daily at first up to 5 tablets; in certain cases higher doses may be given.

Literature and samples available on request

SANDOZ

SANDOZ PRODUCTS LIMITED

134 Wigmore Street, London, W.1.

SAFER *Hypotensive Surgery*

Hypotensive techniques are rapidly gaining popularity in certain types of surgery because they

Procure a comparatively dry operating field
Reduce blood loss
Save blood transfusions
Reduce shock

'ARFONAD'
trade mark brand

\+
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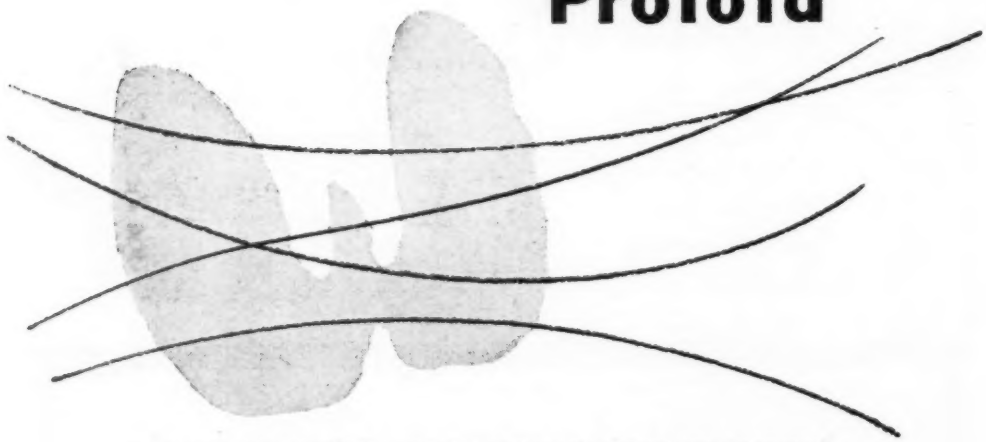
'Arfonad', a hypotensive drug discovered in the Roche Laboratories, has a rapid and transient action which makes it ideal for use by continuous intravenous drip to reduce blood pressure during operations. Clinical trials have amply demonstrated its effectiveness and safety and 'Arfonad' is rapidly becoming the drug of choice for hypotensive surgical techniques.

'Arfonad' is now available in vials of 250 mg. together with 5 c.c. ampoules of pyrogen-free distilled water.

ROCHE PRODUCTS LIMITED • 15 MANCHESTER SQUARE • LONDON W1

Introducing a new Thyroid extract

Proloid



Proloid is the purified essential metabolic stimulant extracted from the thyroid gland, doubly assayed—biologically and chemically—to ensure uniform strength. Proloid, the principle constituent of which is thyroid globulin, is the preparation of preference in any condition where chemically standardized thyroid extracts are now employed. Proloid has the following advantages:—

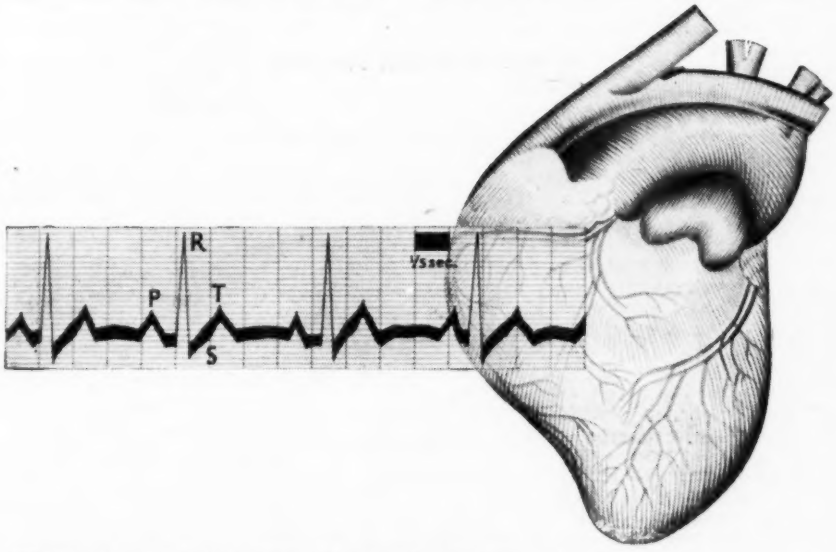
1. Uniform strength—no danger of fluctuating metabolic potency.
2. Less cardiac stimulation than with other thyroid extracts.
3. Standardized to meet B.P. requirements—prescribed in the same dosage.

Proloid

Further literature and samples available on request

No Warner preparation has ever been advertised to the public

WILLIAM R. WARNER & CO. LTD · Power Road, London, W.4.



Governing factors

in balanced digitalisation

A constant and stable composition, rapid action, uniform absorption, and elimination quick enough to avoid prolonged toxicity; these are the qualities which would be expected of a digitalis preparation of choice. They are all evident in Digoxin. A pure digitalis glycoside, Digoxin given by mouth or intravenously permits safe and sensitive control of cardiac arrhythmias, and moreover enables maintenance dosage to be established within a very short time.

FOR ORAL ADMINISTRATION

'Tabloid' BRAND *Digoxin*
Solution of Digoxin, 'B. W. & Co.'

FOR INTRAVENOUS ADMINISTRATION

'Wellcome' BRAND *Injection of Digoxin*
'Wellcome' BRAND *Sterile Alcoholic Solution of Digoxin*

DIGOXIN 'B.W. & CO.'

BURROUGHS WELLCOME & CO. (THE WELLCOME FOUNDATION LTD.) **LONDON**

A NEW ORGANON PRODUCT GIVING

Tranquillity without sedation

Quiescin RESERPINE-ORGANON

QUIESCIN, an alkaloid of Rauwolfia serpentina, is of the greatest clinical value in the treatment of anxiety and tension states. Quiescin gives a feeling of relaxation and comfort, banishes depression, and lowers raised blood pressure.

INDICATIONS

Anxiety states
Mental illness
Hypertension

Quiescin

★ does not produce the mental dullness or addiction associated with barbiturates.
★ wide margin between therapeutic and toxic dosage.
★ no lowering of blood pressure in normotensives.
★ only mild, infrequent side-effects encountered.

DOSAGE

For mental illness and/or hypertension ¼—3 mg. per day in divided doses as required. In anxiety states up to 1 mg. per day as necessary.

AVAILABILITY

Tablets of 0.1, 0.25 and 1 mg. in bottles of 25, 100 and 500.

Literature and clinical sample on request

ORGANON LABORATORIES LTD.
BRETTENHAM HOUSE · LANCASTER PLACE · LONDON · W.C.2
Telephone : TEMple Bar 6785/6/7, 0251/2 Telegrams : Menformon, Rand, London

You can have absolute confidence in
LONDON HOSPITAL CATGUT

With L.H.C. you can safely use the finest gauge suited to the operation. Finer gauges mean less scar tissue and quicker healing. The tensile strength of all gauges of London Hospital Catgut is higher than that of the standards prescribed by the B.P.

specify L·H·C for strength

OSTEOPOROSIS*

A. M. COOKE
D.M. Oxfd, F.R.C.P.
PHYSICIAN TO THE RADCLIFFE INFIRMARY, OXFORD

(*concluded from p. 882*)

The growth of normal bone and its maintenance in health in the adult depend on a number of factors—genetic, nutritional, endocrine, and mechanical. I can do no more than merely mention some of these, but propose to deal in more detail with those relevant to the problem of osteoporosis.

Nutritional Defects

Nutritional defects by which the patient does not receive or absorb adequate amounts of the substances from which bone is made, or adequate amounts of the vitamins concerned in bone formation, are important—and in some parts of the world common—causes of medical bone diseases. Defects of alimentation include protein deficiency from starvation (Eliot and Jackson 1933) or the protein loss of nephrotic renal disease (Emerson and Beckman 1945) and pregnancy in undernourished women, all of which may result in deficient matrix formation—i.e., osteoporosis.

Pregnancy, even in healthy women, makes considerable demands on the mother for all body constituents, notably protein, calcium, and phosphorus. Kesson, Morris, and McCutcheon (1943) compared the incidence of osteoporosis in elderly nulliparous and multiparous women: 40% of those who had not borne children showed osteoporosis, against 72% of those who had borne many children, and this difference was found to be statistically significant. Nordin and Roper (1955) have recently reported four cases of severe spinal osteoporosis in young women after pregnancy. They regard the high level of corticosteroids in pregnancy as a possible factor; but it is only right to point out that there are also high levels of œstrogen in pregnancy. These authors do not give details of the patients' diets or plasma-protein levels.

With regard to calcium and phosphorus, Owen, Irving, and Lyall (1940) in Aberdeen studied the intake of calcium of 16 men aged about 70 in relation to senile osteoporosis. For economic reasons, the daily calcium intake ranged from 225 to 576 mg. Of these 16 patients, 6 had demonstrable osteoporosis. Calcium balances showed that the subjects were more or less in equilibrium on an intake of 200–300 mg. daily, but when given larger amounts, 500–900 mg., they retained large amounts of calcium.

Vinther-Paulsen (1953) in Copenhagen studied 33 patients over the age of 68 (28 women and 5 men) and found that in patients with a daily calcium intake of under 500 mg. the incidence of senile osteoporosis was 74%, whereas in those taking over 500 mg. daily it was only 14%. There were similar figures for the phosphorus intake. His series, however, was small, and it may be that the low calcium and phosphorus intakes were part of a more general dietary deficiency. Except in the grosser deficiencies of protein and mineral intake or absorption, it is doubtful if malnutrition is a common agent in the production of osteoporosis. On the other hand, lack of calcium or phosphorus, and/or lack of vitamin D, will produce osteomalacia—i.e., deficient calcification of matrix causing the wide osteoid seams histologically characteristic of this disease (Maxwell, Hu, and Turnbull 1932, Albright, Burnett, Parson, Reifenstein, and Roos 1946).

Lack of vitamin C produces the peculiar and characteristic lesions of scurvy, which include defective matrix formation and hence one variety of osteoporosis. Lack of vitamin A is not concerned in the production of osteoporosis.

Endocrine Factors

At least six endocrine glands influence bone growth in one way or another—namely the ovary, testis, parathyroid, thyroid, adrenal, and pituitary.

As the actions of the *sex hormones* have been brought to light over the past sixty years, unexpected effects on non-sexual target organs, including the skeleton, have been discovered. In 1916 Laurence and Riddle in the U.S.A. found that the level of plasma-phosphorus in cocks, non-laying hens, and laying hens was in the ratio of 100 to 115 to 205; that is to say, a laying hen shows double the plasma-phosphorus content of a cock, and nearly twice as much as her non-laying sister.

Riddle and Reinhart (1926) investigated the serum-calcium of birds and found in male doves and pigeons a constant figure of 9·0 mg. per 100 ml. In the female bird with resting ovaries the figure was 9·3 mg., but during ovulation it rose to the remarkable level of 19·9 mg. per 100 ml. Other species were investigated, and it soon became apparent that the large changes in serum calcium and phosphorus were confined to birds and related to the fact that they lay eggs with calcified shells. It was next shown that, before the egg-shell is formed, a huge store of calcium is laid down in the bird's long bones. In fact the marrow cavity is almost obliterated by bone, a process known as hyperossification (Riddle, Rauch, and Smith 1944). The demand for calcium while the egg-shell is being formed is astonishing—5 grammes may be transferred from the bones to the shell gland in half a day. These changes are caused only by the female sex hormones, and the male sex hormones have no such effects (Riddle 1942). Also, the hyperossification occurs in parathyroidectomised and hypophysectomised animals just as it does in the normal; so the effects are due solely to the œstrogens (Riddle and McDonald 1945).

Experiments with mammals showed that extended œstrogen treatment was followed by hyperossification as in birds, involving an enormous increase in trabecular bone and extensive obliteration of the marrow cavities (Gardner and Pfeiffer 1938, Poumeau-Delille and Fabiani 1944, Baker and Leek 1946).

The effects of œstrogens on the skeleton vary, however, both at different sites and in different species (Sutro and Pomerantz 1942). In mice, hyperossification of the long bones is accompanied by dissolution of the pubic bones. In the human being and the dove, the action of œstrogens is augmented by androgens, whereas in mice the male hormone counteracts the action of the female hormone. In the rat, the male sex hormone is the stimulator of bone growth and the female hormone the inhibitor. I mention these facts as a reminder of the danger of generalising from the particular and from one species to another (Gardner and Pfeiffer 1943).

In man, long-continued administration of œstrogens causes hyperossification, as is shown by the case of a patient of 88 years who should have been osteoporotic by reason of her age. But she had taken a large dose of dienœstrol (up to 6 mg. daily), for over four years, for the carcinoma of the breast that eventually killed her. Her vertebræ were noticed by the pathologist to be even harder than those of a normal young subject, and sections showed, besides areas of carcinomatous infiltration, areas of cancellous bone entirely free from carcinoma cells where the trabeculæ were much thicker than normal.

In man, the male sex hormone has the important anabolic action of causing nitrogen retention—because it stimulates the laying-down of protein in muscle and in bone matrix (Kenyon, Knowlton, and Sandiford 1944).

* Abridged from the Lumleian lectures for 1955, delivered before the Royal College of Physicians of London on April 19 and 21, under the title of Some Aspects of Skeletal Disease.

As examples of lack of the sex hormones, cases have been recorded of defective bone growth and osteoporosis in primary gonadal insufficiency in both sexes (Albright, Smith, and Fraser 1942, Labhart and Courvoisier 1950).

Of the other endocrine glands, the action of the *parathyroid* on the bones has been extensively studied. Hyperparathyroid bone disease results, inter alia, in increased osteoclastic activity, and erosion of bone with cyst formation, osteitis fibrosa generalisata. It is possible to have hyperparathyroidism without noticeable bone disease, and these patients sometimes show osteoporosis of the usual spinal distribution as the earliest skeletal involvement.

The effects of *thyroid* function on bone are obscure. Long-continued overactivity of the gland produces osteoporosis. Clinical hyperthyroidism and the administration of thyroid extract to normal animals cause an increased calcium excretion (Aub, Bauer, Heath, and Ropes 1929, Albright, Bauer, and Aub 1931), but some authors believe that a diet sufficient to compensate for the increased metabolism prevents these occurrences (Smith and McLean 1938, Drill 1941). Conversely, myxœdematous patients have a diminished calcium excretion.

Normal *adrenal* function is also necessary for normal bone growth. The condition most studied in this respect has been Cushing's disease, where osteoporosis is common (53 out of 61 cases in the series of Eisenhardt and Thompson 1938). It is interesting to note that an old name for this disease was osteoporotic obesity, and Mooser in 1921 described and illustrated an undoubted case of Cushing's disease under the title of osteoporosis, eleven years before Cushing's description. Albright, in his masterly Harvey lecture of 1942 on Cushing's syndrome, attributed these effects to the anti-anabolic action of one of the adrenal cortical hormones, thereby correctly predicting one of the chief actions of cortisone some seven years before its isolation. The osteoporosis of Cushing's syndrome differs in some respects from the commoner types in that the ribs are often, and the skull sometimes, affected (Sussman and Copleman 1942). The osteogenic actions of the sex hormones are effective treatment for adrenal osteoporosis (Albright, Parson, and Bloomberg 1941), although of course the other serious features of hyperadrenalism require treatment as well.

Lastly, *pituitary* hormones affect the skeleton—for example the defective bone development of pituitary dwarfs, and the characteristic overgrowth of bone in gigantism and acromegaly. Acromegaly also causes osteoporosis, probably because of the hypogonadism consequent on the pituitary disease.

Mechanical Factors

Of mechanical factors, immobilisation of the patient plays the chief part in the production of osteoporosis. Indeed, immobilisation of part of the patient will produce corresponding local osteoporosis. Our orthopædic colleagues are well aware of the local osteoporosis in the region of fractures, in the limbs of patients immobilised for the treatment of tuberculous joints (Sissons 1952), and in the legs of congenitally paraplegic children (Katz 1953).

It has long been known that injury of any kind is followed by increased urinary excretion of nitrogen, and the nitrogen-sulphur and nitrogen-phosphorus ratios suggest muscle protein as the source (Cuthbertson 1930, 1942). Howard, Parson, Stein, Eisenberg, and Reidt (1944) found that after injury the nitrogen loss was maximal at six days, and that the patients reached nitrogen equilibrium in thirty-five days. They also noted that the loss of nitrogen was greater in patients with fractures than in others with comparably severe non-osseous injuries. In 6 patients the average loss was 220 g. of nitrogen, equivalent to seven kilogrammes of muscle protoplasm. High-protein feeding had no appreciable sparing effect on the nitrogen loss (Howard, Winternitz, Parson, Bigham, and Eisenberg 1944). As nitrogen katabolism wears off, the protein metabolism returns to normal.

The nitrogen loss is paralleled by a calcium loss. Howard, Parson, and Bigham (1945) found that after fractures or operations for osteotomy, patients immobilised in plaster showed an increase in urinary calcium for months, irrespective of a high or low calcium intake. The loss remained constantly high, at two and a half times the normal figure, for two months, after which it fell. If the patient was allowed out of plaster and mobilised, the urinary excretion of calcium rapidly fell to normal. Likewise patients with paralytic poliomyelitis have been known to lose as much as 1000 mg. of calcium daily in the urine. These high losses in injuries and paralysis are almost unaffected by diet, calciferol, or alkalis.

At first, the negative nitrogen balance was thought to be a direct result of the injury, but there is evidence that the immobilisation itself is an important factor (Cuthbertson 1929). Deitrick, Whedon, and Shorr (1948) immobilised four healthy young men in bed with both legs in plaster-of-paris for six to eight weeks. There was of course no injury, but the nitrogen excretion rose, and during the experimental period they lost 30–80 g. of nitrogen, which is equivalent to 1–2·5 kg. of muscle. These subjects also showed about double the normal loss of calcium and phosphorus. There were no changes in the plasma-phosphorus or plasma-proteins, but the serum-calcium rose by 1 mg. per 100 ml.

The conclusions from these observations must be that the absence of normal stresses and strains removes some of the stimulus to bone formation by osteoblasts, while normal resorption by osteoclasts continues unchecked.

To an otherwise healthy adult the immediate dangers are few: restoration to normal activity is followed by retention of calcium and nitrogen, and anatomical recovery. But in old subjects and children the picture is otherwise. In the former there is likely to be some degree of senile osteoporosis before the injury or immobilisation, and indeed osteoporotic subjects are more liable to fractures than those not so affected. Recovery in the aged, whether from incised wounds, muscle atrophy, or bone atrophy, is slower than in the young.

In children, the skeletal effects of immobilisation are greater than in adults, and the metabolic upset may even be fatal. The change from the normal physical activity of a child to complete rest is proportionately and absolutely greater than in the average adult. Cases have been reported by Albright, Burnett, Cope, and Parson (1941), Dodd, Graubarth, and Rapoport (1950), and Halvorsen (1954).

In old patients, another condition where immobilisation may do serious harm, or even kill the patient, is extensive Paget's disease. Here, for some unknown reason, bone destruction and bone formation proceed simultaneously in a patchy distribution. The bone formation is mostly in the weight-bearing part of the skeleton, the spine and the legs—stimulated, no doubt, by the stresses and strains of physical activity. If the patient is for any reason immobilised, bone formation is checked but resorption continues unabated. These patients may have hypercalcæmia, renal damage, and what Albright has described as "chemical death" (Reifenstein and Albright 1944).

Stevenson (1952) studied 85 orthopædic patients who had been immobilised for periods varying from three months to two years, and no patient failed to show osteoporosis of all the lower limb bones. Sometimes the effects of immobilisation are permanent. In children, the interference with epiphyseal growth may result in epiphyseal disruption and premature fusion with the

diaphysis (Gill 1944). Such patients may also develop a chest deformity, sustain fractures from the most minor trauma when they are mobile, and develop coxa valga.

Attempts have been made to determine how much exercise is required to prevent these osteoporotic troubles. It seems to be surprisingly small. Deitrick (1948) placed voluntarily immobilised subjects on an oscillating bed for eight to twenty hours daily. The oscillation halved the calcium loss and diminished the nitrogen loss, and it was deemed to do this by causing a little weight-bearing on the heels, by inducing slight muscular contraction, and by lessening venous stagnation. Deitrick found that up to ten days' complete immobilisation caused no detectable physical or metabolic damage to the body, but that after two or three weeks effects were manifest and might have serious results. Wyse and Pattee (1954) found the tilting bed ineffective in paraplegic patients, and from their extensive observations concluded that the "stresses and strains" necessary for the maintenance of normal bone may well be due to muscular contractions rather than mere posture.

Some Landmarks

The history of spinal osteoporosis can be briefly told, and for practical purposes begins with the studies of Schmorl of Dresden (Beadle 1931), who examined some 7000 spines and described clearly the pathological anatomy. Previous writers had certainly described osteoporosis, but had often confused it with osteomalacia and other conditions where the bones are soft or brittle.

Plummer, Dunlap, and Moore recorded (thyrotoxic) osteoporosis in 1928. Between 1930 and 1940 cases were reported in Germany, France, Denmark, and the United States of America. In Great Britain, a short communication was made to the Association of Physicians by Morris, Kesson, and Balfour in 1943, and a full paper by Burrows and Graham appeared in 1945. All these writers found the ætiology puzzling, the commonest views being that age and nutritional deficiency were the chief factors.

An important landmark was the paper in 1940 by Albright, Bloomberg, and Smith, who reported 42 cases (40 women and 2 men) aged 65 and under. They remarked that no case occurred before the menopause and that several were in women whose ovaries had been removed earlier in life. They therefore inferred that what was then called idiopathic osteoporosis, as opposed to senile osteoporosis, was really postmenopausal osteoporosis. Aware of the high serum-calcium and hyperossification that occurred in female pigeons and doves, and the stimulating effects of œstrogens on bone formation in male birds, they tried œstrogen therapy on their patients. This produced strongly positive calcium and phosphorus balances maximal in twenty days and continuing unabated for the ninety-eight days that the treatment was given. On withdrawing œstrogens, there was no change for fifteen days and then a slow reversal to the findings before medication. A second course of treatment again produced positive calcium and phosphorus balances. Albright and his colleagues were doubtful whether this treatment would prove to be of practical clinical value, but in further papers showed that œstrogen treatment was in fact extremely effective in relieving the patient's symptoms and, after a long interval, in improving the X-ray appearance of the bones (Albright 1947a). The first papers on œstrogen therapy published in this country were those of Scowen (1948) and Anderson (1950).

The last landmark that I would like to mention is the addition of male sex hormones to treatment. It had been known for many years that testosterone had an anabolic action, produced retention of nitrogen, sodium, potassium, phosphorus, and chloride, and promoted an increase in weight and increase in muscle (Kenyon, Knowlton, Sandiford, Koch, and Lotwin 1940). It was also found to produce an increase in bone matrix, and hence to be a valuable aid in the treatment of osteoporosis (Kochakian 1946, Weinmann 1950). Œstrogens and androgens are effective in counteracting bone atrophy from disuse as well as from hormonal deficiency (Armstrong, Knowlton, and Gouze 1945, Gillespie 1954).

The relationship between osteoporosis and the hormones secreted by the male and female sex-glands is complicated by the presence of hormones with similar actions secreted by the adrenal cortex. It is at present impossible to say what relative parts these two groups play in the metabolism of bone. It has been suggested that not only do women undergo a menopause, but both sexes undergo an "adrenopause," and men even a "leydigpause" (Albright 1947b).

Symptoms and Signs

The symptoms of osteoporosis vary from none at all to complete incapacity from severe pains. The pains are of many types, mainly in the back, radiating around the trunk, radiating to the buttocks and down the legs. They are usually aggravated by movement, jarring, or flexing the trunk. Sometimes the pains are made worse by coughing, sneezing, or straining at stool, suggesting a root origin; but, in spite of the skeletal deformities, compression of the spinal cord does not occur.

The physical signs likewise vary—from none at all to gross spinal deformity. The commonest finding is a shortening of the trunk giving rise to a rounded kyphosis and a transverse fold of skin across the upper abdomen (fig. 5). The infolded skin is keratinised, showing that the fold is of long standing and not a temporary postural phenomenon (Dent, Milne, Roussak, and Steiner 1953).

The X-ray appearances of osteoporosis are important. In advanced cases it is difficult to obtain good X-ray films, because of the poor contrast between the bones and the soft tissues. There is sometimes poorly defined bone texture—the so-called ground-glass appearance—and sometimes there is a fainter but coarser trabecular pattern (fig. 6). The longitudinal trabeculæ are more prominent than the transverse, presumably because the

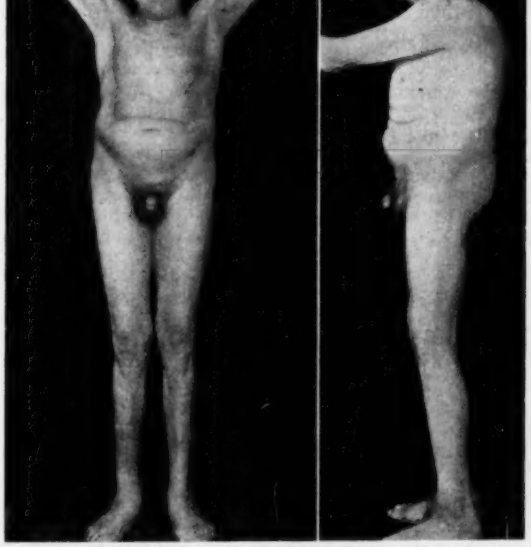


Fig. 5—This patient had severe spinal osteoporosis. Note the short trunk in relation to the length of the legs, the short neck, rounded kyphosis, and transverse fold across the skin of the upper abdomen.

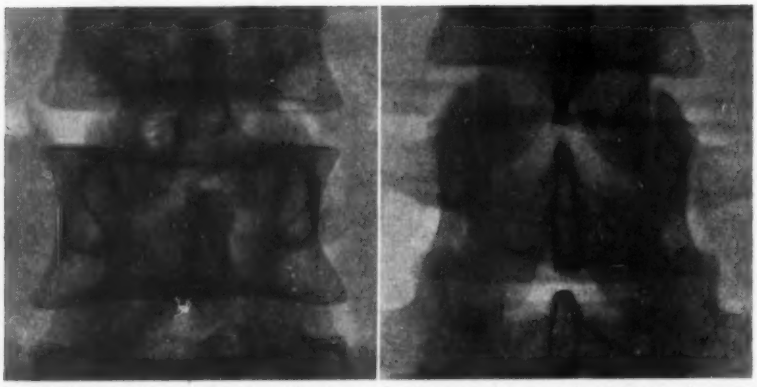


Fig. 6—The normal vertebra on the right shows a fine honeycomb pattern, in contrast to the osteoporotic vertebra on the left which is less radio-opaque, and shows relatively few but coarser trabeculæ of mainly longitudinal distribution.

stresses are greater up and down the spine rather than across. The centra become biconcave, with increase in size in the intervertebral discs (fig. 7). The centra may show denser end-plates than normal. The condition is most marked in the spine, especially in the lumbar vertebræ. There is a general deformity of the column, which shows a rounded kyphosis. A kyphosis may, however, be due solely to disc degeneration. There may be a wedge-shaped deformity of individual vertebræ. All degrees of collapse occur: sometimes the spinous processes become so close together that they develop false joints between them. (Other decalcifying diseases, especially osteomalacia, produce similar X-ray appearances in the spine; so it is unwise to make the diagnosis of osteoporosis on this one observation alone.) It is usually stated that in osteoporosis the pelvis may be slightly affected, but the long bones scarcely ever and the skull almost never. Actually, the other bones are affected, but less obviously so.

Ghormley, Sutherland, and Pollock (1937) found that of pathological fractures arising from non-malignant conditions, one-third were due to senile osteoporosis, a cause three times as common as the next most numerous group.

In patients over the age of 50 admitted to the Radcliffe Infirmary for fractured neck of femur, the condition is three times as common in women as in men. It is difficult to believe that the women are submitted to more trauma than the men, and one must conclude that their bones are more brittle. This belief is supported by work of Rutishauser and Dufour (1950) who examined patients who had died with fracture of the neck of the femur. They cut sections of the necks of the unbroken femurs and found that these always showed characteristic changes including osteoporosis. The condition is also found in the arms and legs, if the necessary predisposing factors are present and if it is sought (fig. 8). These age changes also occur in compact bone as well as in cancellous bone (Amprino and Bairati 1936).

It must be admitted that the difficulties of determining the degree of osteoporosis by X-ray examination are great. Cobb (in Cowdry 1952) has described post-mortem chemical analyses of phalanges from patients whose hands had been radiographed during life. A just-detectable X-ray difference of the dissected bone corresponded to a chemical difference of 9%, but a just-detectable difference in X-ray films of the whole finger corresponded with a 25% difference in chemical analysis. It must be emphasised that these figures were obtained from the most easily X-rayed bone in the body and in a situation where there is more bone than soft tissue. Decalcification of the spine must be even harder to detect.

Similar experiments have been made by Fusi (1953). He placed complete and sliced lumbar vertebræ in 5% nitric acid, which slowly removed the mineral matter. Radiological changes were visible when the isolated vertebræ had lost 3% of their calcium content, but he estimated that in the living subject changes begin to be recognisable only when the vertebræ have lost 60% of their calcium. This is a surprising figure, but supporting evidence is provided by some experiments of Ardran (1951). He bored holes vertically through the centra of normal lumbar vertebræ taken from the post-mortem room. A hole 3 mm. in diameter could be seen clearly in a lateral X-ray film of the isolated vertebra, but if the hole was filled with water it was entirely invisible. A similar hole 14 mm. in diameter—i.e., about the size of the spinal canal—and occupying about one-third of the diameter of the centrum, was naturally very obvious in an X-ray film; but when it was filled with water it was only just visible as a faintly porotic area. If this is so in excised vertebræ, no doubt such X-ray appearances would be even more difficult to detect in a vertebra in the body.

One may therefore conclude that if there are X-ray changes indicating osteoporosis, and particularly if there is vertebral collapse, there must be gross anatomical changes.

The Strength of Bone

The mechanical strength of compact bone has been extensively studied, and a remarkable material it is. Its tensile strength is nearly as great as that of cast iron and its crushing strength three-quarters of that of wrought iron (Bell, Cuthbertson, and Orr 1941). It is about three times as strong as wood. The tensile and compression strengths of compact bone are about equal, an unusual distinction among building materials.

A vertebral centrum consists essentially of a block of cancellous bone, with a very thin outer shell of compact bone and usually weakened by a surprisingly large hole on the posterior aspect for the emissary veins.

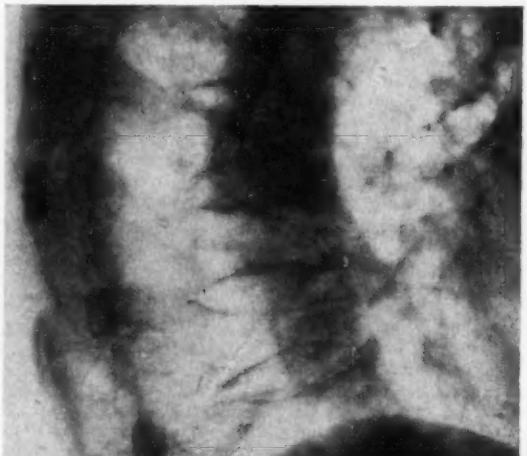
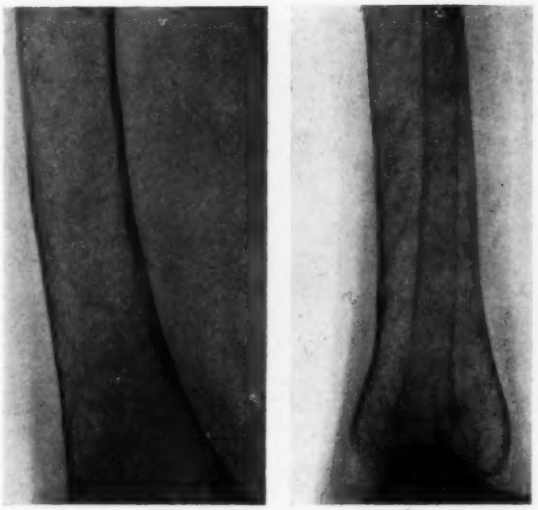


Fig. 7—X ray of the thoracic spine of a woman of 73, with a long history of thyrotoxicosis and immobilisation. She has a pronounced kyphosis with flattened biconcave porotic vertebræ.



a b

Fig. 8 (same patient as fig. 7)—X rays of (a) the lower end of the femur and (b) the lower end of the tibia.

I have been able to find no modern reference to experiments on the strength of cancellous bone. Indeed, the only publication is that of Ward in 1838, to whose book I have already referred. He wrote:

"A cubical inch of cancellous tissue was cut from the centre of the external condyle of an adult macerated femur, and subjected to gradually increasing pressure, with the following results. It sustained four hundredweight without sensible alteration; sank a little on one side upon the addition of the next half hundredweight; and continued to yield upon every further increase of pressure; so that, when the weight amounted to 6 cwt., its height was reduced to half-an-inch. This reduction, however, took place entirely at the expense of the upper portion of the cube; its lower moiety, which presented a much closer texture, bore the whole pressure of 6 cwt. without visible alteration. The weight of the cube submitted to this trial was 54 grs. troy. It was placed during the experiment in the natural position, with its principal fibres upright. The side on which the cube first gave way corresponded to the outer and posterior part of the condyle; and its structure was here evidently looser and more fragile than on the side which, in the natural position, had lain nearest to the axis of the bone. In Mr. Rennie's experiments on the strength of woods, a cubic inch of solid elm was crushed by 1284 lbs. avoirdupois—about $2^1/_2$ times the weight beneath which the cube of reticular tissue began to yield. The comparison may assist the reader in forming a just estimate of the strength of the reticular tissue."

I have performed some similar experiments with the assistance of Dr. J. D. Todd of the School of Engineering at Oxford, which is equipped with appliances for testing the strength of materials. Briefly, we found that lumbar centra from healthy subjects withstood a pressure of 0·61–0·87 ton (1360–1950 lb.) before collapsing. The area of a centrum is about 2·2 sq. in., which gives a strength of about 600–900 lb. per sq. in. as against the 500 lb. found by Ward. One difference was that his specimen was an isolated cube of cancellous bone whereas ours were whole centra, which have a thin layer of compact bone around the outside and are presumably designed specially to withstand the kind of pressure that we applied.

As well as the strength of 900 lb. per sq. in., normal centra show surprising resilience even after fracture by compression. When the centrum has collapsed, if pressure be increased, the deformity becomes greater until the bone is perhaps only $^1/_2$ in. thick and squashed outwards till its diameter is $2^1/_2$–3 in. As soon as the pressure is released, the centrum resumes its normal shape and is sufficiently strong to resist deformity by manual pressure.

Osteoporotic vertebræ are easily crushed, sometimes by trauma and sometimes spontaneously, or at least by the application of little more force than the weight of the upper part of the patient's body or the slight stresses caused by the muscular movements of an old person. Centra from old or osteoporotic subjects withstand a pressure of 300 lb. per sq. in. or less, which may seem a large figure in comparison with the normal. In real life, fractures in bones are seldom produced by static forces but usually by relatively small forces applied dynamically. Work by Evans, Lissner, and Pedersen (1948) has shown that a force of only 16 inch-pounds applied dynamically to the femur can produce deformation patterns similar to those of forces of 400–700 pounds applied statically. Many forms of athletics and games must produce great stresses on the skeleton, but in them fractures are relatively rare because in controlled movements the muscles are used to support the skeleton. On the other hand, an unexpected fall on to the outstretched hand may produce a Colles fracture with surprisingly little violence. Similarly patients with osteoporosis may fracture several vertebræ from minor but sudden trauma.

Diagnosis

As I have said before, osteoporosis is, strictly speaking, a histological diagnosis and can be made with certainty only by the morbid histologist, but there are clinical features and X-ray changes sufficiently well defined to justify the diagnosis at the bedside, and it is an important diagnosis, because the condition is often treatable (fig. 9).

In a patient over 60 years of age, any pains in the trunk or legs for which there is no obvious explanation should raise in the physician's mind the possibility of osteoporosis. If the patient is a woman, the chances of this being the cause are six times greater than if he is a man. If there is a history of loss of height, the odds in favour of the diagnosis are further increased. In women, special inquiry should be made about the menstrual history, the date of the menopause, and any gynæcological operations, especially to ascertain whether the ovaries have been removed. Questions about diet and physical activity may provide suggestive information.

On examination, loss of height as shown by measurement, evidence of shortening of the axial skeleton, a rounded kyphosis, a transverse infolding of the skin

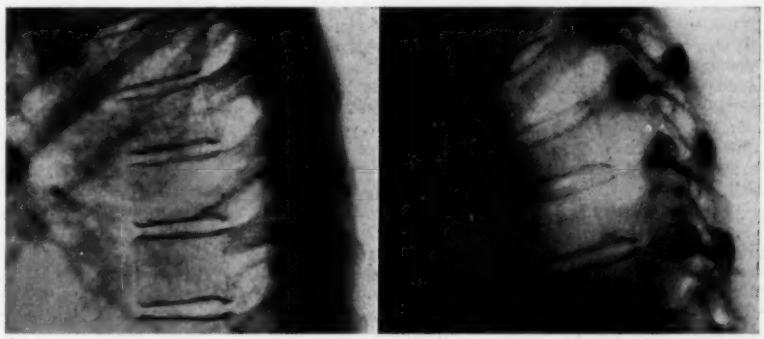


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Fig. 9—(a) The osteoporotic spine of a woman aged 52 before treatment. (b) The same area from the same patient (then aged 58) after 6 years' treatment with calcium and vitamin D. This has had no effect on the osteoporosis, which has progressed and caused compression fracturer.

across the upper abdomen, and approximation of the lowest ribs to the pelvis are important signs. The patient tends to look older than her stated age, with a lax wrinkled skin. Evidence of other disease will be lacking, although the thoracic deformities make the patients unduly liable to chest infections. The urine should, of course, be tested for Bence Jones protein, which strongly suggests myelomatosis but is occasionally found in other generalised bone diseases. Sulkowitch's reagent for the quantitative estimation of calcium in the urine provides a rough screening test for the excessive calciuria of hyperparathyroidism. Radiography of the spine and pelvis will usually reveal the characteristic changes of osteoporosis, with or without fractures. If there is doubt, an X-ray film of the skull (which is never affected) and some of the long bones (which are rarely affected except in very advanced cases) should provide valuable negative evidence. The presence of a pseudo-fracture at once raises the question of osteomalacia, in this country usually a sequel to steatorrhœa.

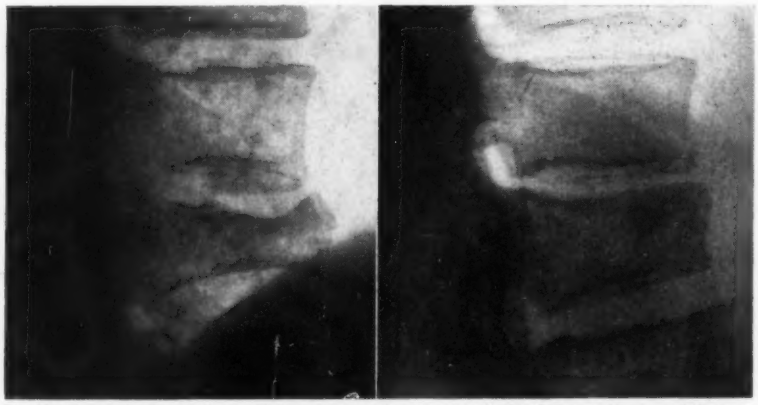

Fig. 10—X rays showing radiographic improvement in osteoporosis after 2½ years' hormonal therapy.

In osteoporosis the serum calcium and phosphorus and alkaline phosphatase are within normal limits. The average total plasma-proteins are in the lower normal range and the average plasma-albumin just below the lower limit of normal. Basically, the diagnosis is made by the exclusion of other bone diseases. Bone biopsy from the iliac crest or from the dorsal spine of a lumbar vertebra is a practicable investigation (Vogt 1949, Vogt and Tønsager 1949). Lastly, it is sometimes justifiable to try a therapeutic test.

Diagnostic traps are to be found in the other diseases that produce osteoporosis as a secondary effect. Cushing's disease, acromegaly, and thyrotoxicosis usually present characteristic features which should not give rise to serious difficulties. More subtle and deceptive are the osteoporotic changes of myeloma, hyperparathyroidism, the osteolytic type of Paget's disease, and so-called idiopathic osteoporosis. The last is a rare and puzzling variety of osteoporosis occurring in young subjects of either sex, without demonstrable endocrine defect and unresponsive to hormonal treatment.

Treatment

The diagnosis of senile or postmenopausal osteoporosis made, the essentials of treatment are firstly to get the patient out of bed, if only to sit up in a chair, at the earliest possible moment. Secondly, if the pains are severe, a light spinal jacket will give physical and moral support. Thirdly, a high-protein diet and a pint of milk a day will ensure an adequate supply of the materials from which bone is formed. Last, but not least, is the hormonal treatment. Opinion differs on the details, but there can be no doubt that the patient needs some preparation of male sex hormone, such as testosterone propionate 10–20 mg. daily by injection, or methyl testosterone 30 mg. daily by mouth. Androstenediol is said to have the anabolic actions without undue masculinising effect. The patient also needs a female sex hormone, such as œstradiol benzoate or dipropionate 2 mg. daily by injection, or an oral preparation such as dienœstrol 1 mg. daily, or æthinylœstradiol 0·1 mg. daily. There are satisfactory proprietary preparations containing appropriate mixtures of male and female sex hormones. Large doses are not required, and osteoporosis is one of those diseases where twice the dose of medicine does not produce twice as good an effect, but the reverse. Indeed, large doses of œstrogens inhibit bone growth. Intermittent treatment will tend to prevent unpleasant side-effects, and a régime of four weeks' treatment and two weeks off is often recommended. Treatment should be continued for a long period, probably for not less than two years. In successful cases, the trunk pains will be greatly improved in two weeks, and in severe bedridden cases in two months. The effects of treatment are usually more pronounced in patients who have undergone surgical removal of the ovaries than in those who have had the normal gradual diminution of œstrogen activity by age.

There are many cases on record of patients with postmenopausal osteoporosis, and indeed with senile osteoporosis, who have shown great subjective improvement on endocrine therapy and a corresponding improvement in function; but very few cases have been reported where the X-ray appearances of the bone have been improved. Nearly all writers on the subject comment on this curious fact.

Cases of X-ray improvement have been reported by Albright and Reifenstein (1948), by Sherman (1948), by Snapper (1952), and by Polishuk and Kleinhause (1952), and I have seen two myself (fig. 10). A possible explanation is that X-ray changes for the better are seldom seen before two years' treatment and many patients are not followed up for so long a period. Reifenstein and Albright (1947) estimated that osteoporotic patients receiving appropriate endocrine therapy retain about 200 mg. of calcium daily. If we assume that a severely osteoporotic patient has lost half the bone substance in his skeleton, which is not an excessive estimate, at this rate of replacement it would take seven or eight years to restore the bones to normal.

Voltaire's gibe that "a physician is one who pours drugs of which he knows little into a body of which he knows less" is unfortunately still true and applies even to endocrinology. In the treatment of osteoporosis, the chief unpleasant side-effects arise from the masculinising effects of androgen therapy, which are of course most noticeable in women, who provide the majority of the patients. There may be coarsening of the skin, acne, hirsutism, deepening of the voice, and occasionally an unseemly increase in libido. Oedema of the ankles may occur from retention of electrolytes. These effects are seldom serious, but they are distressing to the patient. They can best be prevented firstly by the use of small doses, secondly by intermittent treatment, and thirdly by the opposing action of œstrogens.

The commonest undesired effect of œstrogen therapy is uterine bleeding in women past the menopause. The

possible carcinogenic effects of male and female sex hormones are a very remote danger because the doses are small and the drugs are merely replacing something which the patient is lacking.

Prevalence

How common is osteoporosis? Omitting local forms such as osteoporosis of the pubic bone in prostatic disease, Sudeck's atrophy, osteoporosis cranii circumscripta, and the like, over 800 cases have been reported (references in bibliography marked with an asterisk). The proportion of female to male patients was 6 to 1, and this is a significant ratio to which I shall refer later.

Albright has described osteoporosis as the commonest bone disease likely to be encountered by the physician. Priority of place must, I think, be disputed by Paget's disease, but there can be no doubt that both are extremely common. It is interesting, therefore, to see how osteoporosis is dealt with in the standard British textbooks of medicine for students. The following table shows the number of lines devoted to the subject in ten such textbooks:

Textbook	*Date*	*Osteoporosis of any type*	*Postmenopausal osteoporosis*
A	1950	0	0
B	1950	4	0
C	1951	6	6
D	1952	0	0
E	1952	0	0
F	1953	4	4
G	1953	0	0
H	1953	0	0
I	1953	40	0
J	1954	8	0
Total		62	10

A Personal Series

My own experience is similar to that of all those who have interested themselves in this condition. The adult inpatient records of the Radcliffe Infirmary over the past sixteen years show that, of the common medical osteopathies, there have been 110 patients with Paget's disease, 36 with spinal osteoporosis of one sort or another, and 6 with osteomalacia (all from steatorrhœa). I have also found some osteoporotic subjects among the outpatients, and with some private patients have brought the total to 50.

Of these 50 patients, 43 were women and 7 men. 30 were over the age of 65, and the osteoporosis was presumably senile in origin. 20 were under 65, 14 women and 6 men, and in the women the condition was presumably postmenopausal (fig. 11).

The results of routine laboratory investigations were:

	Number of observations	*Mean*
Serum-calcium	37	9·5 mg. per 100 ml.
Plasma-phosphorus	32	4·0 mg. per 100 ml.
Plasma-phosphatase	31	9·6 units
Plasma-protein	19	6·7 g. per 100 ml.
Plasma-albumin	19	3·7 g. per 100 ml.
Blood sedimentation-rate ..	26	25 mm. in 1 hour

It will be seen that the serum-calcium, plasma-phosphorus, and plasma-phosphatase are all within normal limits—a diagnostic point of importance. The total plasma-proteins are within the normal range, but the plasma-albumin is just below the generally accepted lower limit of normal (4·0 g. per 100 ml.). The slightly raised blood sedimentation-rate is difficult to relate to the bone condition because there are so many other factors which may affect it.

Apropos of the low serum-albumin levels, Henneman, Barter, Forbes, and Dempsey (1953) tried the effect of protein administration on 4 patients with osteoporosis. There was no demonstrable effect from oral administration. Daily intravenous injections of 50 g. of human serum-albumin for periods of from nine to thirty days produced a rise in serum-albumin and considerable retention of calcium and phosphorus. Henneman et al. inferred, but could not prove, that the treatment was a stimulus to bone formation and that serum-albumin might "actually be the transport form of bone matrix precursor."

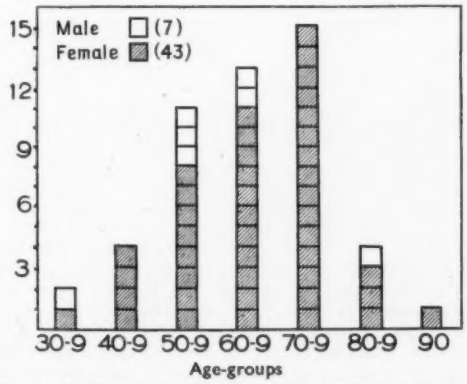

Fig. 11—Age-incidence of 50 patients with spinal osteoporosis.

Of my series, 37 patients were given hormones—mostly combined œstrogen and androgen therapy—but 5 had œstrogens only and 3 androgens only. The follow-up was adequate in 27 cases. Of these, 1 patient said that she felt worse, but the remainder reported subjective improvement in varying degrees. 4 patients were able to discard plaster casts, and 2, from being completely bedridden, were able to get up from bed and walk about. 16 patients over the age of 65 were treated with endocrine therapy and adequately followed up. Of these, 15 were obviously greatly improved, and 1 was the patient mentioned above who felt worse.

Prevention

There is no doubt that age is a common and important factor, but not, as has often been supposed, the only factor. It is probable that a large proportion of persons over the age of 70 have some degree of osteoporosis. The fact that at all ages the ratio of women to men is six to one suggests that something other than age is operative, and all the evidence points to this being an endocrine factor.

It is a matter of some therapeutic importance that patients with so-called senile osteoporosis respond to the appropriate treatment for so-called postmenopausal osteoporosis. The distinction between these two types is probably not only artificial but non-existent, and they are really the same disease.

As regards prevention, there are about 7 million postmenopausal women in England and Wales, not to mention those younger who have had the ovaries removed or irradiated, and over 5 million men above the age of 50. Many persons over 50 will not, of course, develop osteoporosis, other than the gradual and inevitable changes which will occur if they live till 70 or over. But a considerable number will sustain compression fractures of the spine, either spontaneously through extreme osteoporosis, or through injuries occurring on top of moderate osteoporosis, and some will become bedridden and crippled. A number will sustain fractures of the femoral neck from trivial injuries.

This formidable problem will be met if physicians, surgeons, and gynæcologists have an awareness of the existence of osteoporosis and its implications and realise that it is one of the few treatable chronic conditions in elderly patients, and indeed is probably the only age change in the body that can be reversed.

No-one could seriously advocate universal endocrine substitution therapy after the age of 50. It would be administratively impossible and very costly, and would carry hazards. There are, however, some simple preven-

tive measures worth considering, specially by those responsible for the care of old people. It will obviously be wise to encourage some physical activity, or at least to discourage undue inactivity. It should not be difficult to arrange an adequate protein, calcium, and phosphorus intake—a pint of milk daily would guarantee 680 mg. of calcium. It would be simple to record the height of each subject annually, and to inspect the abdomen for the appearance of a transverse fold across the epigastrium. Any aches or pains in the trunk for no good reason should at once call for antero-posterior and lateral X rays.

Patients with osteoporosis, or even patients potentially osteoporotic, should be given cortisone or corticotrophin with great caution, if possible not in large doses or for long periods (Hjorth and Dragsted 1953). In the recorded cases of osteoporosis with fractures occurring during cortisone treatment, the patient has almost always already qualified for osteoporosis by immobilisation or the postmenopausal state (Boland and Headley 1950, Teicher and Nelson 1952, Demartini, Grokoest, and Ragan 1952, Curtiss, Clark, and Herndon 1954).

Summary

I conclude by summarising the points which I consider the real essentials of these lectures.

Firstly, the skeleton undergoes slow, steady resorption from all its surfaces, more apparent in cancellous than compact bone.

Secondly, this process is counteracted by endocrine factors and the physical stresses and strains of use. It is affected to a lesser extent by diet and age.

Thirdly, osteoporosis is an extremely common condition.

Fourthly, so-called senile osteoporosis has an endocrine component which is treatable.

It will have been obvious that these lectures have been largely a compilation from the work of others, whose original contributions to the subject I gratefully acknowledge. I have received the most generous help from colleagues and friends too numerous to mention, but I must allow myself the pleasure of placing on record my particular indebtedness to Dr. Alastair Robb-Smith.

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HIATUS HERNIA:
SURGICAL RELIEF OF REFLUX ŒSOPHAGITIS

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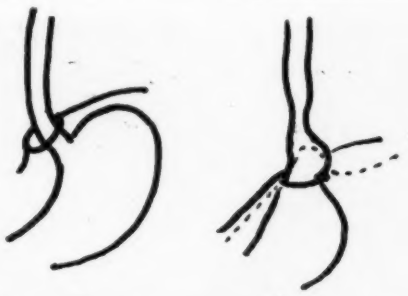
HIATUS hernia of the sliding type is a very common condition, in which the tissues at the œsophageal hiatus of the diaphragm have relaxed and allow the cardio-œsophageal junction to become retracted into the chest. This retraction unfolds the acute angle, between the œsophagus and the fundus of the stomach, which normally prevents reflux of the gastric contents into the œsophagus (fig. 1*a*). The hernial sac may occasionally be quite large, but usually it is very small—indeed scarcely more than a potential sac which can be invaginated with the finger for an inch or so (fig. 1*b*). The characteristic symptoms are caused by reflux, and their severity does not depend on the size of the hernia.

Ætiology

The ætiology is not fully understood, but advancing years, obesity, and increased intra-abdominal pressure, as in pregnancy, all play a part. Since the pressure within the abdomen is positive and the pressure in the chest negative, it is perhaps not surprising that this hernia should appear from time to time, and its more frequent recognition in recent years may be related to dietetic and weight changes in the population. Gall-stones are often found in association with hiatus hernia and may arise from common causes. Hyperchlorhydria with duodenal ulceration is also a common concomitant, and it is possible that, in both cholelithiasis and ulcer, a vagal reflex may cause muscular contractions of the œsophagus and so lead to retraction of the cardia. More probably, however, in duodenal ulcer it is the hyperchlorhydria which aggravates the effects of associated but unrelated reflux.



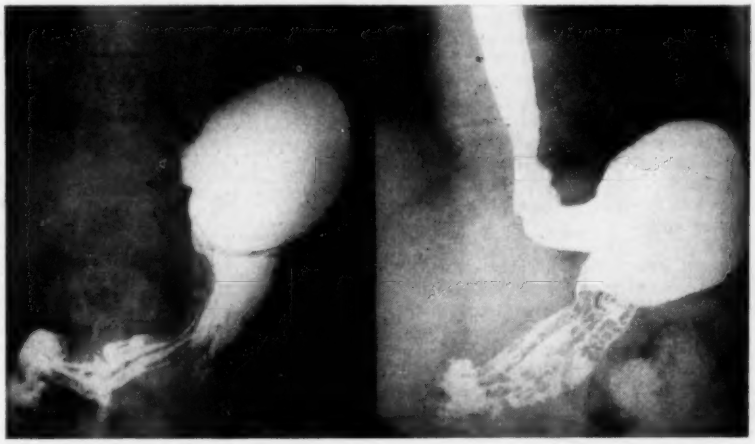
a *b*

Fig. 1—*a*, Normal angle between œsophagus and stomach tends to obstruct gastro-œsophageal reflux; *b*, retraction of cardia into thorax is followed by small sac of peritoneum (unfolding of cardia facilitates gastro-œsophageal reflux).

Symptoms and Diagnosis

The symptoms which suggest retracted cardia are heartburn (retrosternal burning pain) and acid regurgitation into the throat, especially on lying down or on stooping. Later there may be painful dysphagia from œsophagitis or ulceration or obstructive dysphagia from spasm or stricture. The stricture may be annular from the healing of superficial lesions or may be due to dense fibrosis of the œsophagus and peri-œsophageal structures, causing organic fixed shortening. Secondary anæmia from steady slight bleeding is not uncommon, and sharp hæmorrhage may rarely occur. One of our patients had a fatal hæmorrhage from perforation into the aorta, and in another, who recovered, a peri-œsophageal abscess was caused by a penetrating ulcer. These severe complications are quite unusual and are more likely to arise from ulceration at the level of the hiatus in the gastric pouch of a large hernia than from the commoner inflammation or ulceration of the œsophagus itself caused by reflux. The pain of a penetrating ulcer is experienced at the level of the lower ribs, especially towards the back. It may be excited by swallowing.

Investigations to confirm and assess the condition comprise radiography, a search for occult blood, the estimation of gastric acidity, the exclusion of other disorders (e.g., duodenal ulcer and gall-stones), and œsophagoscopy. The endoscopy may reveal superficial ulceration, spasm, or stricture formation, redness and œdema, or simply an abnormal regurgitation of gastric



a *b*

Fig. 2—Demonstration of hiatus hernia: *a*, with patient in head-down position, diaphragm holds back gastric contents, and no herniation is visible; *b*, a further swallow of barium reveals herniation.

Fig. 3—Typical small hiatus hernia.

contents. Gastric mucosa is seen sooner than is normal in some cases but not in all, since the instrument will displace the cardia downwards in the early and fully mobile case.

A normal bismuth series may show retraction and incompetence of the cardia, or this may be demonstrable only with a special technique in which, after the meal, the patient, having been put in the head-down position to show the fundus, is given a further bolus to swallow (fig. 2). Even with the greatest care it may be difficult to distinguish with certainty between a small hiatus hernia (fig. 3) and the physiological intermittent dilatation of the œsophagus, known as an epiphrenic ampulla, which is not associated with regurgitation. Observation under the X-ray screen is of the greatest value and most instructive.

Treatment

Non-operative treatment gives a variable amount of relief. Weight should be reduced, and food should not be taken for some hours before retiring, when antacids should be given as a nightcap. The patient should be instructed to sleep propped well up with several pillows.

Surgical Treatment. — Conventional surgical treatment for those who do not get relief from non-operative measures is ordinarily directed to correction of the deformity. By a thoracic approach the lower end of the œsophagus is drawn down to below the diaphragm and fixed there with sutures. Reconstitution of the normal œsophago-gastric angle is the essential and effective step. Unfortunately most workers report a high incidence of recurrence after this operation, and in our own hands the recurrence-rate has been so high that we no longer use this method.

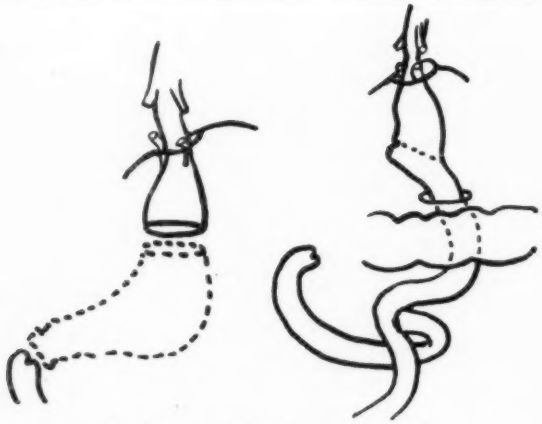


Fig. 4—Scheme of operation described in text.

An alternative operation which we practise and advocate is based on a different principle. We accept the incompetent cardia but seek to prevent regurgitation by securing rapid emptying of the stomach. We also produce achlorhydria and divert the bile and pancreatic stream so that such regurgitation as may persist does no harm. These desiderata are achieved by vagotomy, partial gastrectomy, and re-anastomosis by the Roux-Y method (fig. 4). The approach is from the abdomen

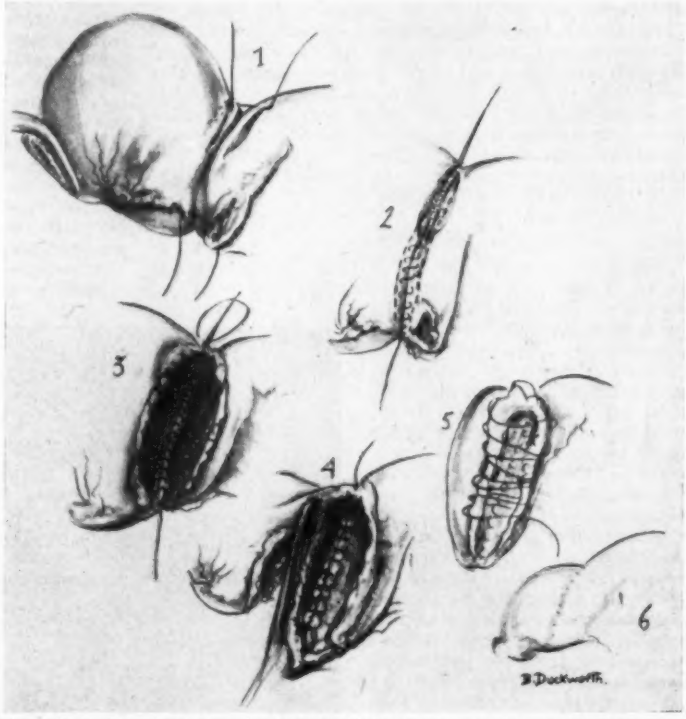


Fig. 5—Gastrojejunal anastomosis: 1, start of edge-to-edge suturing at point of exit from stoma near greater curve; 2, continuation of this suture line as conventional seromuscular suture, and indication, by interrupted lines, of incisions into stomach and jejunum; 3, posterior suture line completed and corner at open end of jejunum trimmed away; 4, distal part of stomach being cut away; 5, anterior suture line taking mucosa alone near greater curve and all coats elsewhere (cf. fig. 6); 6, suture-line completed.

and consequently enables any associated abnormality to be given appropriate attention :

The diagnosis is confirmed by palpation of the hiatus, through which a pouch of peritoneum can be palpated or expelled by the examining finger. If the hernia can still be reduced, which is usual, the left lobe of the liver is mobilised, the peritoneum incised around the hiatus, and the œsophagus freed and drawn down into the abdomen for an inch or two. Vagotomy is then carried out in the usual way. If a completely satisfactory denervation is not achieved, this fact should be carefully noted, so that, in the event of pain recurring, a transthoracic vagotomy may be advised. If the patient is obese, or if the œsophagus cannot be pulled down, vagotomy by the transthoracic approach becomes obligatory.

The gastrectomy follows the usual lines. We like to conserve the gastro-epiploic arch. In hiatus hernia we do not always divide the left gastric vessel near its origin ; alternatively we divide the descending branch on the lesser curve. About two-thirds of the stomach is removed, and the duodenum is carefully closed as usual.

The upper jejunum is then displayed, and a point is selected a few inches beyond the flexure for its division. Nutrient vessels are sacrificed and arcades preserved in such a way that the jejunum distal to the cut can be drawn up through the mesocolon and anastomosed to the stump of the stomach without tension. The opening at the cut end of the jejunum is extended by an incision along its antimesenteric border, and the resultant corners are trimmed away. The anastomosis is made with great care at the point of exit at the greater curve, since easy emptying of the stomach remnant is essential to success. Sometimes at this point in the anastomosis we use the edge-to-edge technique illustrated in fig. 5. The mesocolon is finally fixed to the stomach proximal to and around the stoma.

The anastomosis in Y is completed about twelve inches below the stoma by bringing the " biliary " loop underneath and round to the left side of the vertical limb. To avoid any narrowing of the jejunum carrying the food-stream (the vertical limb) the suturing is done with meticulous care in a special manner. As illustrated (fig. 6) the seromuscular coats are joined edge to edge with a continuous catgut stitch the loops of which are placed as delicately and as close together as possible. The posterior mucosal layer is oversewn, and the stitches almost encroach on the first layer. The anterior mucosal layer is made with a Connell stitch, almost encroaching on the cut seromuscular coats, and these are finally sutured together as in the first layer. This close suturing controls hæmorrhage, whilst the use of the extreme edges of the structures avoids constriction in a remarkable way.

During the anastomosis it is impossible to control bleeding from the jejunal ends with the ordinary bowel-clamps, but we have found that Crile's vessel-clamps on the mesenteries are excellent.

Fig. 6—End-to-side jejunal anastomosis by edge-to-edge technique; 1, seromuscular coats joined ; 2, incision through mucosa indicated ; 3, posterior mucosal layer completed ; 4, final seromuscular incision at end of afferent loop indicated ; 5, anterior mucosal closure with Connell's stitch ; 6, edge-to-edge seromuscular suture completed.

Discussion

It is twenty years since one of us performed his first gastrectomy for hiatus hernia. There was a large fixed hernia with a penetrating ulcer of the stomach at the level of the hiatus. Polya gastrectomy below the level of the ulcer (Wells 1933) was undertaken as a first-stage procedure. It gave complete relief, and no further treatment was required. More recently, however, we have been disappointed with the results of both the Polya gastrectomy and the Steinberg (1949) modification in the presence of retracted cardia because of the persistent

HIATUS HERNIA : FORMER OPERATIONS, ASSOCIATED DISORDERS, AND PRESENT SYMPTOMS

Patient no.	Sex	Age (yr.)	Former operations	Associated abdominal disorders	Duration of follow-up (mos.)	Present symptoms	Weight
1	F	56	None	None	14	Sensation of fullness after meals	Gain
2	M	50	None	Duodenal ulcer	13	Eupeptic	Loss
3	F	63	None	Duodenal ulcer, cholelithiasis, cholecystectomy done	13	Eupeptic	Slight loss
4	M	57	None	Duodenal ulcer	12	Eupeptic	Unchanged
5	M	28	None	None	10	Eupeptic	Gain of 1 st.
6	M	74	None	None	10	Eupeptic	Unchanged
7	F	61	None	None	4	Sensation of fullness after meals	Unchanged
8	M	49	None	None	4	Eupeptic	Unchanged
9	F	40	Heller's operation 1950, transthoracic repair of hiatus hernia 1951, Steinberg gastrectomy for recurrent hernia 1952	None	4	Eupeptic	Slight gain
10	F	45	Steinberg gastrectomy 1953	None	2	Palpitations after meals, occasional regurgitation of clear fluid	Unchanged
11	F	59	None	Cholelithiasis, cholecystectomy done	2	Eupeptic	Unchanged
12	F	64	Cholecystectomy 1940	None	2	Eupeptic	Unchanged

vomiting of bile. In patients 9 and 10, who had each undergone Steinberg gastrectomy, the symptoms of œsophagitis persisted, and there was profuse regurgitation of bile on recumbency or stooping. Conversion of the anastomosis to the Roux type, without disturbing the original gastrojejunal stoma, and vagotomy, have produced, in patient 9, complete relief of dyspepsia and gain in weight. Patient 10 had also complained of palpitations after food, following the gastrectomy. This symptom has persisted to a lesser degree after the conversion operation and, in addition, the patient has occasional reflux of clear fluid into the mouth.

The cases are summarised in the accompanying table. The predominant complaints in the three patients with concomitant duodenal ulcer were related to the incompetent cardia rather than the ulcer. The history of the remainder conformed to a common type, and the following is typical.

Case 6.—A man, aged 74, was admitted to the Liverpool Royal Infirmary in August, 1953, with four years' history of burning epigastric and retrosternal pain radiating to the neck and regurgitation of acid fluid into the mouth on lying down. He was often wakened at night by a choking sensation due to fluid in the throat, and there were pain and difficulty in swallowing and loss of weight. Probable œsophageal carcinoma had been diagnosed in another hospital.

On admission clinical examination was negative. Radiography showed slight spasm in the lower œsophagus and, in the Trendelenburg position, revealed a sliding hiatus hernia with incompetence of the cardia. A fractional test-meal showed hyperchlorhydria. Retraction of the cardia and œsophagitis were confirmed at œsophagoscopy, but, in view of the patient's age, medical treatment with diet, alkalis, and an inclined sleeping-posture was advised.

Progress.—Seven months later the patient was readmitted with no improvement in his symptoms and requested an operation. Ten months after operation he is free from dyspepsia and has returned to his work as a hairdresser.

All our patients obtained complete relief from their main symptoms by operation. Subsequent fractional test-meal or 'Diagnex' tests have shown achlorhydria, which suggests that vagotomy and two-thirds gastrectomy do in fact protect the Roux anastomosis from the danger of stomal and jejunal ulceration which formerly led to its abandonment in the treatment of peptic ulcer. In case 8, because of difficulty in exposure, vagotomy was not performed with the gastrectomy. The patient remained well until three months later, when there was a recurrence of heartburn and pain on swallowing, which was relieved by alkalis. Eupepsia has been restored by transthoracic vagotomy.

It was feared that the entrance of bile and pancreatic juices into the alimentary tract at a distance from the stomach might interfere with normal digestion and absorption and lead to a deficiency type of post-gastrectomy syndrome; but some of the patients have in fact gained weight and in none has there been a significant loss. There has been no evidence of vitamin deficiency. It is too soon to be sure whether or not microcytic iron-deficiency anæmia will develop, but it is, if necessary, easily corrected (Wells and Welbourn 1951).

Summary and Conclusions

Attention is drawn to the frequency of retracted cardia and gastro-œsophageal reflux as a cause of dyspepsia.

The diagnosis of the condition is outlined and, for its treatment, an operation which is new in this context is described. It consists in vagotomy, partial gastrectomy, and re-anastomosis by the Roux-Y method.

Satisfactory early results in twelve consecutive cases are summarised.

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THE MANAGEMENT OF CHILDREN UNDERGOING TONSILLECTOMY

PREMEDICATION WITH METHYLPENTYNOL

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IT is estimated that every week, in Great Britain alone, 1500 children undergo tonsillectomy. In most cases this will be their first experience of hospital, and the responsibility for seeing that it does not cause emotional harm which may affect the child's whole life, rests largely on the anæsthetist. Though much has already been written on the subject [8 14 15 17 20] it is one which should be continually reviewed in the light of new methods.

Admission to Hospital

With a child of under 5 years of age, the important question is whether he has already learnt to adjust to a separation from his mother by the normal process of going to school. If this has not yet happened, no amount of sedation with drugs will save him from being mentally hurt by this forced separation. So important did the late Sir James Spence feel this to be that he devoted much of his energies to establishing a hospital unit in which mothers had to remain in hospital with their babies. It would be difficult to insist on this for all tonsil cases; but much can be done even in routine hospital work to minimise the emotional trauma.

So far as is practicable, each block of admissions should be of a similar age-group. The constant crying of the 2-year-old can be very upsetting to a 10-year-old, and in addition the older boy resents being in hospital "with kids."

The mothers of all children of age-groups usually admitted to children's wards should not only bring the child into hospital but should give him his first bath and put on his night-clothes, which could, with advantage, be the child's own. Many children feel more secure in their own clothes. The time of admission is important and should never be in the morning unless this is absolutely unavoidable. To put a young child to bed in the morning is synonymous with punishment. The first meal in hospital should be given by the mother, aided by the nurse who will look after the child. This raises a very important point. The number of people dealing with the child should be as small as possible—ideally one nurse only, who will thus become the temporary mother-substitute.

While the mother is still present, the child should meet as many as possible of the people whom he will see next day, including theatre porters. All these persons should be chosen for their ability to handle children—there is a type of hospital porter who would frighten any child out of its wits. If not already done at home, this would be a good time to tell the child exactly what will happen the following day.

One point which should be emphasised is the importance of the child's bringing into hospital some favourite toy, however shabby. This is brought out very well in Robertson's [28] film, in which the toy is a piece of old well-chewed blanket. The toy will be returned with the child, for the old idea of infection being transmitted in this way is no longer held. This toy will naturally accompany the child to the operating-theatre, which at the end of a morning's list may thus look rather like a scene from a Walt Disney cartoon. The toy must also be in the cot when the child wakes up.

On the Way to the Operating-theatre

If the child is not asleep when his time comes to go to the theatre he should never be made to lie down on the trolley. To lie flat on the back while being wheeled along corridors is very frightening. The operations

should be carefully timed, even when this means some inconvenience. All operations on children should be done as early as possible in the day. A child will tolerate the absence of his breakfast, but the absence of dinner as well, particularly if other children in the ward are having theirs, is really putting too great a strain on his control.

Two more simple points are worthy of mention here. The first is the old-fashioned practice of making the child wear a mackintosh cap and bib for tonsillectomy. With modern surgical techniques this surely is no longer necessary, and the children are much happier without them.

The other point is the wearing of face-masks by the theatre staff. It is most important that every person handling a child on his way to the theatre and in the anæsthetic room should have the face fully exposed. Half-masked faces are extremely frightening to children, and it is a great help to the child to be able to recognise his ward nurse.

Sedation

Many anæsthetists feel that, to avoid any possible emotional upset, all children of whatever age should be completely asleep before leaving the ward for the theatre. This would in many ways be ideal, provided that the perfect drug or combination of drugs could be found. Even so, the remarks in the foregoing paragraphs still apply to the time before and after the child has its actual operation, and I suggest that, however perfect the "asleep in the ward" technique is, some case will occur where sedation is incomplete. Many think, although it is difficult to prove, that in the resulting partially disorientated state a child is even more impressionable than when fully conscious. This certainly applies to adults, as many will remember from the early days of the use of barbiturates by mouth for premedication.

Innumerable methods have already been used to ensure that every child is fully asleep before leaving the ward, and each has its enthusiastic advocates. Having tried them all I have given them up one by one. Personally, I feel that the rectal administration of drugs to children should be avoided except when absolutely necessary. Children may not like an injection or a nasty medicine, but that is an affair of the moment that a child can have explained to it. Not so with rectal interference, and the very young child is also psychologically sensitive about its rectum. Hence, while admitting the safety of rectal paraldehyde and the smoothness of rectal thiopentone I cannot agree that they should be used as a routine practice. Furthermore I did find, when using rectal paraldehyde in children some years ago, that many had postoperative pyrexia and for several days were not fit to return home. The disadvantages of any barbiturate (see below) are also applicable to rectal thiopentone.

I have also used morphine for premedication, either as morphine and atropine, or as 'Omnopon' and hyoscine, using the dosage schedules advocated by various workers.[3 16] I was immediately confronted with an increase in postoperative vomiting and complaints from the ward sister that quite a number of children were dangerously depressed on return to the ward, and that great difficulty was experienced in keeping their airways clear. The dosage of these extremely potent drugs is small, and minute errors can have serious consequences.

At present the drugs most popular for premedication are pentobarbitone ('Nembutal') and quinalbarbitone ('Seconal'). Though undoubtedly satisfactory in many cases, these have very grave disadvantages. I have found very little to choose between them, and I wonder whether it would be possible to differentiate between these two drugs by purely clinical assessment. The following remarks about pentobarbitone therefore apply equally to quinalbarbitone.

Barbiturates

In the first paper on pentobarbitone in this country Magill [21] wrote:

"As with other barbiturates the variable reaction of individuals to nembutal renders the dosage by mouth and by rectum difficult to determine beforehand. This is especially noticeable in children. In general, it may be stated that children are more resistant than adults, and in children the variation has little to do with age or development. For example, one well-developed child age 7 was fast asleep after the administration of grs. $1^1/_2$, while another child aged 5, and of small physique, was quiescent, but not asleep after grs. 3 had been given."

He further said that "Irrespective of the dose or method of administration, a variable degree of restlessness was noted during the immediate post-operative period in 13 patients. Five were children, and their condition was controlled by potassium bromide."

Waddy [30] confirmed the postoperative restlessness; and in subsequent articles on these drugs the same two drawbacks of uncertainty of effect and postoperative restlessness have been mentioned.[4 6 12 18 29] This still applies, even if in a lesser degree, when the drug is given rectally.

Postoperative restlessness is a more serious problem than this uncertainty of dosage, and can be so great that a single nurse can hardly control the child. A wardful of such children is in a real state of pandemonium, which can be reduced to a manageable degree only by giving morphine or one of its derivatives.

From the state of uncontrolled restlessness it is so easy to pass to that of an uncontrolled airway, serious enough after any operation but liable to be extremely dangerous after an operation on tonsils and adenoids. By whichever method the operation is done, blood is apt to accumulate in the upper respiratory passages. Again, even if the airway is not obstructed, there is the very real risk that blood and mucus will be inhaled into the lungs during the state of respiratory depression which may follow the giving of morphine after a barbiturate.

I was delighted to see attention drawn to this by Fraser [9] and Middleton Price.[24] The situation is often made worse by ordering further morphine to "control the hæmorrhage." I recently had experience of such a case, and at necropsy the lungs were full of inhaled blood, which had without doubt been the cause of death. I have indirect knowledge of other such cases, which could usefully be made known and discussed. Even if this complication occurs only in 1 case in 2000, it is too high a price to pay for the doubtful advantage of the child's being asleep before leaving the ward.

A much less important difficulty with these barbiturate preparations is that of administration. They all have an extremely unpleasant and long-lasting taste and hence are supplied in capsules. Nurses have developed many ingenious ways of administering these, but often several mouthfuls of water are given. When there has been some emotional upset during the attempt to swallow the capsules, this may not be absorbed from the stomach, with the result that the child vomits during the induction of anæsthesia. Also in such cases the drug has not usually been absorbed and the child is still awake, thereby losing the whole purpose of this method. The drug may become absorbed later, another factor contributing to postoperative respiratory depression. With these drawbacks in mind I had for some time relied on atropine alone for premedication, induction usually being by intravenous thiopentone—a technique used by many others. But, in spite of the most careful handling, about 20% of the children were obviously much upset by the visit to the theatre and yet another injection.

Methylpentynol

The advent of methylpentynol therefore seemed to offer a via media between the dangers of a barbiturate

and the disadvantages of no preoperative sedation. All the early reports [2 7 10 11 13 22 23 25 26] of its use as a hypnotic emphasise the absence of side-effects, especially respiratory depression and alteration of blood-pressure or pulse. Methylpentynol was reported as having a specific effect in allaying fear and apprehension, even in doses where actual sleep was not obtained. It is available commercially as a flavoured coloured elixir of 'Oblivon' (British Schering) containing 250 mg. of methylpentynol per teaspoonful. The flavour cannot be described as pleasant—it vaguely suggests paraldehyde—but in actual practice children very rarely complain about it.

As soon as this investigation was planned, it became necessary to find some method of recording the children's reactions which would be impersonal and in no way subject to bias or prejudice. It was decided to follow the work of Robertson of the Tavistock Clinic and make a film record showing children's reactions with different forms of premedication. Cases were chosen at random by the camera operator from routine operating-lists. This film is now available and demonstrates better than words the reactions of the children. In nearly every case the child looks happy not only on going up to the theatre but also—perhaps more important still—on waking up in the ward afterwards.

We soon found that in many cases the doses recommended by the makers had little effect. We now give two teaspoonfuls for children aged 2–4 years, three teaspoonfuls for children of 4–8 (varying slightly with the build or temperament of the child), and four teaspoonfuls for children of 8–10. The methylpentynol should be given an hour before the anæsthetic, and the atropine can then be given half an hour later, when the child is much less upset by having an injection. With these larger doses the children nearly all arrived in the anæsthetic room quiet and apparently unperturbed, some actually asleep though easily aroused. Brown and Ellis [5] confirm the great safety margin of methylpentynol.

In nearly every case anæsthesia was induced with a "sleep dose" of intravenous thiopentone. This is a safe and easy procedure in a quiet and peaceful child, but the possibility of an intra-arterial injection has always to be borne in mind. Attention was first drawn to this by Macintosh and Heyworth,[19] but there should be no difficulty in these cases, because the child will cry at once if the artery is touched. If the child cries at all, the position of the needle must be checked; and, if there is any doubt, the injection is not continued. Instead it is quite easy to induce anæsthesia with nitrous oxide without distress to the child.

With this method no difficulty from vomiting in induction (Rendell [27]) has been observed; nor has there been any increase in postoperative vomiting. I think the difference in my series (which now extends to more than 500 cases) is due to the fact that the methylpentynol has been given early enough to be absorbed from the stomach.

The ward immediately commented on the greatly decreased degree of postoperative restlessness in children premedicated with methylpentynol. Children given no postoperative 'Nepenthe' were carefully watched and showed little restlessness; what little there was ceased in a few minutes. No special control was required. Absence of respiratory depression was quite obvious, and the children could keep their own airways clear even if they rolled over on to their backs. This was equally true after an injection of nepenthe minim 1 per year of age. With such a dose the children all remained peacefully asleep, and it is now our routine to give this injection as soon as the child shows signs of returning to consciousness.

Before deciding on the value of this new method of preoperative sedation it was necessary to study it from the child's point of view. A survey of these children was therefore undertaken along the lines of the Albany Research Project.[1] An experienced psychiatric social worker was employed who also had a knowledge of general hospital routine and an understanding of children. She was given the admission lists from the record department of the hospital and chose 100 cases at random. I did not know which cases she had visited, and she did not know what anæsthetic technique had been used in any particular case. Thus any possible bias of opinion was eliminated. The children chosen were visited in their homes about a week before admission and again several days after their return home. Many of these children were visited several times in a period up to three weeks after their discharge from hospital.

QUESTIONNAIRE FOR CHILDREN IN HOSPITAL

NAME AGE DATE OF BIRTH

ADDRESS SCHOOL

		BEFORE ADMISSION	AFTER ADMISSION
Standard at School			
Likes School			
Habits:-	Nightmares		
	Tempers		
	Nail Biting		
	Bed Wetting		
	Others		
Dressing:-	Getting up		
	Going to bed		
Eating:-	Time taken		
	Fads		
	Bowels		
Play:-	Friends		
	Phantasies		
FAMILY BACKGROUND		Other Children	
		Mother	
		Father	
GENERAL COMMENTS			

Several interesting factors emerged from this investigation. The first was the great advantage of a visit "by somebody from the hospital." The child's mother and the child had the whole episode explained in simple non-technical language. It would be an excellent way of reducing fear of hospital if this could be done in every case; if not, perhaps a simple letter explaining the routine in hospital could be sent with the admission note.

The questionnaire is shown in the accompanying figure. This is quite a simple form because it was not considered advisable to make each child into a psychological study; but all the necessary facts are included in it.

The numbers of children receiving pentobarbitone and methylpentynol were almost equal. This was quite fortuitous. At once it was evident that the proportion of children disliking their hospital experience was equal in each case (see table):

REACTION TO STAY IN HOSPITAL

—	Received pentobarbitone	Received methylpentynol
No. of children	51	49
Reaction favourable	40	39
Reaction unfavourable ..	11	10

The "unfavourable reactors" varied in their complaints. Most mentioned specifically a dislike of "pricks," while others merely mentioned that they did not like having to sleep in a room with the lights on, or that they did not like the food.

The number of children showing any real emotional upset was quite small in each series. Of those receiving pentobarbitone, 3 showed increase of nightmares, and of those receiving methylpentynol 5 showed emotional upset, such as crying at night, and disinclination to return to school. Children showing this emotional upset were all under 6 years old.

It is therefore fair to deduce from this admittedly small survey that there is no specific advantage from the child's point of view in heavy preoperative sedation, that obtained with methylpentynol being adequate to prevent any appreciable psychological trauma.

The number of children mentioning an objection to the injection was considerable, and equal in each series. This led me to think of some method of avoiding the injection of atropine. At first the atropine was dissolved in a little water in doses of gr. $^1/_{100}$–$^1/_{50}$ according to age, and this solution was added to the elixir. This had a definitely adverse effect on the not too pleasant taste of the elixir, and in addition the children were not dry enough for comfort during induction or operation. At the same time it was thought that the sedation obtained was not so good; but, since secretions were not adequately controlled, only a few cases were investigated.

Hyoscine was next used in the same way in doses of gr. $^1/_{150}$–$^1/_{75}$. This did not affect the taste of the elixir, and in every case the drying effect was satisfactory. In addition there was a much greater sedative effect. Nearly every child arrived in the anæsthetic room actually asleep, although easily aroused. In the postoperative stage there was no restlessness and, even if nepenthe was given, the children were quite easily aroused. The ward nurses in fact commented that the children seemed to sleep naturally for the rest of the day after returning to the ward, although they could be roused quite easily and given a drink, after which they quietly settled down and returned to sleep. This modification has not yet been used in many cases but so far shows great promise.

It thus seems that methylpentynol, given as elixir of methylpentynol, provides a safe and reliable premedication for children. There is no increase in emotional upset, even if the children are not actually asleep on arrival in the anæsthetic room. Induction of anæsthesia with a sleep dose of intravenous thiopentone gives a very smooth and pleasant induction, and there is no danger of postoperative respiratory depression. The addition of hyoscine to the methylpentynol by mouth, thereby avoiding two injections, is at the moment being investigated and shows every prospect of being successful.

Summary

It is important to avoid emotional trauma in children admitted to hospital for tonsillectomy, especially when they are under 5 years of age.

Simple points in the management of children during their stay in hospital are outlined.

The disadvantages and dangers of using barbiturates for preoperative sedation are discussed.

The use of methylpentynol in a flavoured elixir for preoperative sedation is described. A follow-up of 100 cases showed no difference between the emotional response of those children sedated with pentobarbitone and those receiving methylpentynol. Methylpentynol has a great safety margin, and none of the disadvantages of the barbiturates.

A sound film has been made illustrating the points in the paper.

I am indebted to Mr. H. G. Downer and Mr. P. C. Rushton, whose cases these were and who performed all the operations.

I wish to acknowledge the very great help and coöperation I have received from the nurses of the E.N.T. wards of Worthing Hospital. The children were visited by Mrs. E. E. Nevell, sometime psychiatric social worker attached to Graylingwell Hospital. The expenses of this investigation and of making the film were met by a grant from the research funds of the South-West Metropolitan Regional Hospital Board. The photography was under the charge of Mr. J. Howard. Dr. R. Mac Keith helped with the script of the film.

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CHEMICALLY IDENTIFIABLE BACTERIAL RESIDUES IN LUNG LESIONS

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THE syndrome described by Caplan (1953) in coalminers with pneumoconiosis consists in the development of radiologically characteristic pulmonary nodules in patients with concomitant rheumatoid arthritis. In a community of South Wales coalminers Miall, Caplan, Cochrane, Kilpatrick and Oldham (1953) found that more than half the men with this characteristic X-ray picture also had rheumatoid arthritis, compared with only 3% of those with ordinary progressive massive fibrosis.

Because of our work on the chemistry of the subcutaneous nodules of rheumatic fever (Consden, Glynn, and Stanier 1953) we were invited by the South Wales investigators to study the chemistry of these various lung lesions with a view to confirming the difference between the Caplan nodule and other forms of pneumoconiotic fibrosis. In the course of this work we found that in some samples the hydrolysates appeared to contain α-ε-diaminopimelic acid (D.A.P.) when examined by paper chromatography. Since this amino-acid is not a normal constituent of mammalian tissue but is widely distributed among bacteria of various genera and species, including *Mycobacterium tuberculosis*, it seemed important to establish with more certainty that D.A.P. was present,

especially as infection was no longer demonstrable by the usual methods of microscopy, culture, and animal inoculation. This method of detection is presented below.

Tissues Studied

(1) *A caseous nodule* obtained by biopsy from a man aged 23 was a typical caseous tuberculoma 1·5–2·0 cm. in diameter with an acellular non-fibrous necrotic centre surrounded by a zone of cellular fibrous tissue 2–3 mm. thick. Occasional foci of epithelioid and giant cells were present in this cellular zone. No acid-fast bacilli were found despite prolonged search of several sections.

(2) *Tuberculous lung tissue* obtained by biopsy from a woman aged 28 contained several dense fibrous foci acellular in the centre and only slightly cellular at the periphery. The apparently necrotic centre, when stained by Gomöri's (1937) method for reticulin, revealed a dense network of fine and coarse collagen fibres with some still finer argyrophil fibrils interspersed with them. No tissue histologically characteristic of tuberculosis was seen, and no acid-fast bacilli were found.

(3) *Progressive massive fibrosis*: a sample removed at necropsy from a man aged 55 consisted of jet-black and fairly dense fibrous tissue about 1 cm. in diameter and surrounded by a narrow margin of emphysematous lung. The main fibrous lesion consisted of a dense central network of collagen with a surrounding fibrous capsule radiating into the surrounding lung. Similar but smaller nodules were present in the adjacent lung tissue. The acellularity of the fibrous tissue was striking.

(4) *Infective nodules* obtained at necropsy from a man aged 57 consisted of densely pigmented lung with diffuse fibrosis and some nodules up to 2 mm. in diameter formed of interlacing collagen fibres. Cellular reaction was virtually absent from the fibrous areas and the intervening lung tissue.

(5) *A Caplan nodule* obtained at biopsy from a man aged 52 was a sharply defined lesion about 1·5 cm. in diameter. Histologically the main central part of the nodule appeared structureless or faintly fibrillar when stained with hæmatoxylin and eosin, but with silver impregnation this central area was seen to be composed of a dense network of collagen fibres with finer argyrophil fibrils in the interstices. Peripherally there was a band of cellular tissue containing fibroblasts and foci of lymphocytes and histiocytes, but the cells were not in a palisade formation. The microscopic appearance lacked the characteristics of tuberculosis, and the structure of the acellular centre was quite different from that of the subcutaneous nodules of rheumatoid arthritis.

(6) *Normal lung removed* at necropsy from a male town-dweller, aged 59, who died of congestive cardiac failure consisted mainly of the dark dusty surface and was used as a control of the other lung specimens.

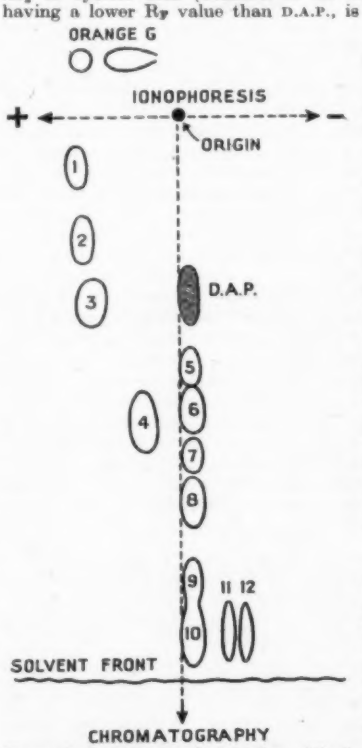
Method of Demonstrating D.A.P. in Lung Lesions

Samples of all the lung tissues were washed with 0·8% saline solution followed by distilled water, dehydrated in acetone, and autoclaved to remove collagen. Tests for D.A.P., as described below were made on the residues, since preliminary chromatography had indicated that in tissues which contained this amino-acid, the bulk of it was not extracted by autoclaving. This procedure therefore has the advantage of concentrating the D.A.P.-containing constituents in the test material, because from a half to two-thirds of the organic material of the lung samples was removed by autoclaving. The residues of Caplan nodule, tuberculous lesion, and progressive massive fibrosis after autoclaving contained about one-third of the original organic matter, whereas the infective nodule and caseous nodule residues contained about one-half.

The following simple test for D.A.P. depends on a two-dimensional separation on paper by chromatography followed by ionophoresis at right-angles to the direction of chromatography.

The tissue was hydrolysed with 6 N HCl at 105–110°C for 17 hours. Excess acid was removed by evaporation in vacuo. Insoluble humin was separated by centrifugation. A portion of the hydrolysate was treated with excess bromine water and stood for 5 minutes. Excess bromine and acid were removed by evacuation over KOH. The treated hydrolysate was concentrated to a suitable volume, and 5–10 µl. containing the equivalent of 0·25–0·33 mg. of protein was placed on a spot half-way across a sheet of Whatman no. 1 filter paper 24 cm. wide. Chromatography was carried out in water-saturated phenol in an atmosphere of NH_3 (produced from 0·3% NH_3 on the floor of the chamber) for 21–24 hr., by which time the solvent front had travelled about 25 cm. from the origin. The sheet was thoroughly dried and the paper below the solvent front removed. The remainder was suspended and sprayed lightly and evenly with M/20 phosphate buffer, pH 7, the spraying being done first on either side of the chromatogram and finally along the chromatogram itself. The wet sheet was then placed in position in the paper-electrophoresis apparatus with the edges of the paper dipping into the electrode compartments containing M/20 phosphate buffer, pH 7. The apparatus consisted of a flat shallow 'Perspex' box designed for holding paper in a horizontal position. Before the current was applied, a drop of Orange G solution was placed above the origin to act as a control. The voltage applied was about 14 V. per cm., and the starting current 0·5 mA per cm. of width. The current was passed for 1 hour, after which the paper was removed, dried, and treated in the usual way with ninhydrin. During the ionophoresis the Orange G separates into two components (red and yellow). The faster (yellow) travels at a similar rate to aspartic acid and hence is useful for observing progress during the run. The resulting two-dimensional separation (chromatophoretogram) is illustrated diagrammatically in the accompanying figure.

In phenol-NH_3 the amino-acids which would interfere with D.A.P. are glutamic acid, ethanolamine phosphoric acid, and cystine, all of which occur in animal tissues. The first two, because of their acidic nature, migrate towards the anode in an electric field. Cystine is completely oxidised by Br_2 to cysteic acid (Consden et al. 1946), which besides having a lower R_F value than D.A.P., is also acidic. D.A.P. behaves like the monoamino-monocarboxylic acids and migrates slowly towards the cathode because of electro-endosmosis, and no known amino-acid of an animal-tissue hydrolysate would occupy the same position after this two-dimensional separation. Tyrosine, if present, is converted by the bromine to dibromotyrosine, which migrates slowly towards the anode at pH 7 and has an R_F value in phenol similar to glycine. The basic amino-acids migrate towards the cathode.



Chromatophoretogram of a bromine-oxidised protein hydrolysate containing diaminopimelic acid (chromatography in phenol-NH_3 followed by ionophoresis at pH 7).

D.A.P., diaminopimelic acid; 1, cysteic acid; 2, aspartic acid; 3, glutamic acid (ethanolamine/phosphoric acid, if present, would occur here); 4, dibromotyrosine; 5, serine; 6, glycine; 7, threonine; 8, alanine; 9, valine; 10, leucine, &c.; 11, arginine; 12, lysine.

Work and Dewey (1953) describe a method of demonstrating D.A.P., based on similar principles, but this is more laborious and time-consuming than the method described above.

A number of solvents can be used for the first chromatographic separation because the interfering components can

be subsequently separated by ionophoresis or converted to acidic amino-acids by oxidation. However, solvents which incorporate acid are a disadvantage because it is impossible subsequently to remove all the acid from the paper. This increases the ionic strength of the buffer and hence causes too high a current for convenience in the ionophoretic separation. Further, if ethanolamine phosphoric acid were present it would only have appreciable ionophoretic mobility at pH 6 or higher (Clarke et al. 1955). The acid in the paper would therefore require stronger buffer solutions to raise the pH sufficiently, and this would also cause high current. This could be overcome by using a lower voltage, but the time of ionophoresis would be correspondingly increased. The width of the sheet is not important; it depends on the dimensions of the paper-electrophoresis apparatus used.

Results

The lower limit of detection of D.A.P. is about 0·5 μg.

Hydrolysed fat-extracted *M. tuberculosis* by the above test showed a moderately strong D.A.P. spot corresponding to about 5·0 μg. Caseous tissue showed a spot of moderate strength (about 2·0–3·0 μg.); the Caplan nodule showed a faint but quite distinct spot (about 1·0 μg.), and a trace (about 0·5 μg.) was found in the non-caseous tuberculous lung. No D.A.P. was detected in the infective nodule, in the sample of progressive massive fibrosis, or in the normal lung.

Discussion

D.A.P. was first observed in *Corynebacterium diphtheriæ* by Work (1949) and in *M. tuberculosis* by Asselineau and Lederer (1950). Subsequently many investigations have shown its wide occurrence in bacteria (see Work and Dewey 1953), but it has not been demonstrated in either tissue fluids or tissue hydrolysates of mammals.

The ability to demonstrate D.A.P. even in minute quantities in samples of lung tissue indicates heavy bacterial colonisation at some period in the evolution of the lung lesion. Since the method used cannot detect less than about 0·5 μg. of D.A.P., the concentration of this amino-acid in the positive specimens must have exceeded 1·5–2·0 μg. per mg. But D.A.P. only constitutes some 2% of the dry weight of those bacteria likely to occur in lung: 1·5–2·0 μg. therefore represents 75–100 μg. of dry bacillus weight. This is present in the residue after autoclaving; and, assuming that only negligible amounts of D.A.P. are extracted by autoclaving, evidence is thus obtained that lung lesions, despite the absence of cultural or histological evidence of infection, may contain identifiable bacterial residues resulting from a weight of infection amounting to at least 2·5% of the dry weight of the lesion itself.

Moreover, with the caseous material the strength of the D.A.P. spot suggested that the bacterial contribution to the lesion was much higher, amounting to at least 20% of the lesion. These figures must not be taken as evidence that bacterial debris is actually present to this extent, since the bulk of the organisms may well have been removed by the normal scavenging and enzymatic activities of the tissues. On this hypothesis D.A.P. should be a component of the highly resistant residue of the bacteria. That this is so for *M. tuberculosis* has been shown by Colover and Consden (unpublished) in a chemical study of the fraction of the tubercle bacillus that is active in the experimental production of allergic encephalitis (Colover 1954). An active residue remaining after prolonged extraction with fat-solvents, followed by digestion with proteolytic enzymes, still contained D.A.P. in readily detectable amounts. Some mention should be made of presence of D.A.P. in the Caplan nodule and its absence in progressive massive fibrosis. Further investigation of the latter is necessary before this difference is established. Prior bacterial infection might be an important factor in pathogenesis of one or both of these conditions.

Two further aspects of these results are worthy of comment:

(1) The detection of bacterial debris by the presence of chemically characteristic components might well prove a useful method in the study of lesions of obscure ætiology, such as sarcoidosis. The presence of either arabinose, rhamnose, or mycolic acid would provide further confirmation of the presence of such bacterial residues.

(2) In view of the rôle of tubercle bacilli in the experimental genesis of immunity and allergy, the persistence in the tissues of resistant bacterial fractions might be of great significance.

Summary

A method is described for identifying α-ε-diamino-pimelic acid in some lung lesions.

This amino-acid was found in a caseous tuberculous nodule, a Caplan nodule, and a sample of non-caseous tuberculous lung tissue. It was not found in a sample of "progressive massive fibrosis" nor in an "infective nodule."

The bacterial residues in the caseous nodule represent a weight of infection amounting to about 20% of the dry weight of the lesion.

It is a pleasure to acknowledge the coöperation of Dr. J. Gilson, Dr. W. E. Miall, Dr. D. Rivers, and Dr. A. L. Cochrane, of the Pneumoconiosis Research Unit, for supplying tissues and for helpful discussion. The infective nodule was provided by Prof. J. Gough.

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SIMPLIFIED OPERATIVE ROUTINE FOR CARCINOMATOUS OBSTRUCTION OF COLON

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FOR the treatment of acute colonic obstruction due to neoplasm it has been usual either to do the Paul-Mikulicz operation or to relieve obstruction with a colostomy, later resect the lesion, and finally close the colostomy. Though the Paul-Mikulicz method is neat and only requires a second operation for closure of the colostomy, it is unsuitable for the purpose of eliminating neoplasm since there is inadequate clearance of the lymphatic field. By the three-stage procedure the temporary colostomy is made as far proximal to the lesion as is practicable, in order to give space for adequate resection later; but at the second operation the temporary colostomy tends to limit manœuvre within the abdomen and thus the area resected.

When obstruction is not present, resection and anastomosis of the large bowel at one operation, without a colostomy, is now commonplace and has proved safe. Where obstruction is present, this has been relieved by the time the second of the three operations is undertaken; so the colostomy is no longer required. If the colostomy is close to the neoplasm, both can easily be resected and an end-to-end anastomosis done. Thus the third operation for closure of colostomy is eliminated. Furthermore the essential step of excising the neoplasm and its area of spread is facilitated, since the whole of the large bowel and its mesentery are at the surgeon's command as soon as the colostomy has been mobilised and detached. It is contrary to orthodox practice to construct the temporary colostomy as close as possible to the neoplasm; but the need for this modification must be borne in mind when the patient is seen in the

phase of acute obstruction if the two-stage procedure is planned. It is to draw attention to the value of this method that the following three cases are reported.

Case-reports

Case 1.—A woman, aged 70, was admitted on Feb. 22, 1954, to the Queen Elizabeth Hospital with acute obstruction of the colon. Laparotomy next morning revealed a mobile growth of the rectosigmoid. A loop colostomy was constructed in the left iliac fossa as close to the lesion as possible. After operation an infected hæmatoma formed in the wound. Sixteen days after admission the abdomen was reopened through a low left paramedian incision, thus avoiding the previous site on the right side. It was confirmed that the neoplasm of the rectosigmoid was at an early stage; no glands were palpable, and so anterior resection was undertaken. The colostomy was detached from the abdominal wall and withdrawn into the abdominal cavity. From that moment it was possible to do an anterior resection in the usual manner, removing the growth within the pelvis after mobilising the upper rectum and ligating the superior hæmorrhoidal vessels; end-to-end anastomosis between the mobilised portion of the descending colon and the rectum at the level of the pelvic peritoneal reflexion was a simple matter after removing the sigmoid and rectosigmoid, which contained both growth and colostomy. The operation was completed by suture of the laparotomy and colostomy wounds, the latter being drained. Recovery was uneventful, and the patient returned home two weeks after the second operation.

Case 2 was similar to case 1 as regards site of the neoplasm, but the technique of removal was somewhat different. A man, aged 53, was admitted on March 24, 1954, with intestinal obstruction due to a growth found at laparotomy to be adjacent to the brim of the true pelvis. The sigmoid loop was long; at the lowest possible site a colostomy was formed in the left iliac fossa. After this operation the sigmoid tended to prolapse through the colostomy incision. Ten days later the abdomen was reopened through the lower left paramedian incision. Because of the bulk of colon exteriorised as the result of prolapse at the colostomy, it was decided to perform the dissection through the paramedian incision but deliver the resected portion through the colostomy wound, so as to avoid contamination which might result from returning the prolapsed portion and the colostomy to the abdomen. The splenic flexure was mobilised, and since it was impossible to dissect in the lower part of the left paracolic gutter, the left colonic vessels were ligated at their origin from the medial side, and special care was necessary to avoid injuring the ureter. An anterior resection was done with end-to-end anastomosis between the upper descending colon and the rectum. The colostomy and the neoplasm were excised together in the length of colon removed through the colostomy incision. The paracolic gutter was drained through the wound in the left iliac fossa which was repaired. Convalescence was smooth and the patient returned home twelve days after operation.

In **Case 3**, a woman aged 61, the lesion was at the splenic flexure. The preliminary laparatomy was done through a lower left paramedian approach; and the colostomy, placed as far to the left in the transverse colon as possible was brought out above the level of the umbilicus through a left transrectal incision. Fourteen days later the left paramedian incision was reopened and was continued upwards to include the colostomy wound and detach the colostomy. An excellent exposure was thus obtained, and left hemicolectomy was done with end-to-end anastomosis of the right transverse colon to the lower sigmoid. The paracolic gutter was drained through a stab incision in the flank, and corrugated rubber was placed at the site of the pre-existing colostomy. The patient had an undisturbed convalescence and was discharged twelve days later.

Management before resection in all cases has included colostomy washouts; and by mouth for three days streptomycin 1 g. twice daily, alternatively oxytetracycline 250 mg. six-hourly, or phthalylsulphathiazole 2 g. thrice daily, with the same drug instilled as a suspension into the distal loop of the colostomy. At operation it has been found best to tie a dry swab over the colostomy and to make no attempt to close its opening with sutures, since this tends to be ineffective and promote bleeding and thus the possible spread of contaminants. In the first case oxytetracycline, and in the second case streptomycin, was instilled around the area of dissection and anastomosis before closing the peritoneum. This was done because of the wound infection complicating the one, and the prolapse increasing the possibility of contamination in the other; no local application of this sort was made in the third patient. Case 1 was given oxytetracycline after operation because pus from the previous incision was encountered on reopening the abdomen. No drugs of this sort were given to cases 2 and 3 after operation, and routine chemotherapy is avoided at this stage since these drugs are better kept in reserve for possible complications.

The neoplasm itself has always been covered at an early stage with a surgeon's mask, the strings of which are tied tightly around the bowel above and below the lesion to prevent exfoliated malignant cells from spreading to the site of anastomosis, where they may be implanted (Cole 1952), while the mask itself prevents direct exfoliation and implantation due to manipulation.

Conclusions

A method is described for treating carcinomatous obstruction of the colon and rectosigmoid. At the initial operation to relieve obstruction, the colostomy is placed as close to the growth as possible so that both may be resected together at a second and final operation.

The advantages include a reduction from three to two in the number of operative stages and therefore reduced risk of morbidity; shorter stay in hospital; and greater freedom of manœuvre, permitting wider excision of the area of lymphatic spread.

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PAROXYSMAL NOCTURNAL HÆMOGLOBINURIA

MARCHIAFAVA—MICHELI SYNDROME

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CHRONIC hæmolytic anæmia with paroxysmal nocturnal hæmoglobinuria (P.N.H.) is fairly rare. Crosby (1953) remarks that 162 cases have been reported since Marchiafava's first description in 1928, but probably the true incidence is much greater. The ætiology is unknown. The present concept is of a cell defect shared by erythrocytes, leucocytes, and platelets. This defect, of unknown nature but possibly one of cell-stroma protein, renders the erythrocyte abnormally susceptible to a hæmolytic system present in normal plasma.

It has been claimed that electron microscopy in such cases has shown abnormal structure in the envelope of the hæmolysed red cell (Matthes et al. 1951). Electron microscopy in the case presented below did not support this contention.

Case-report

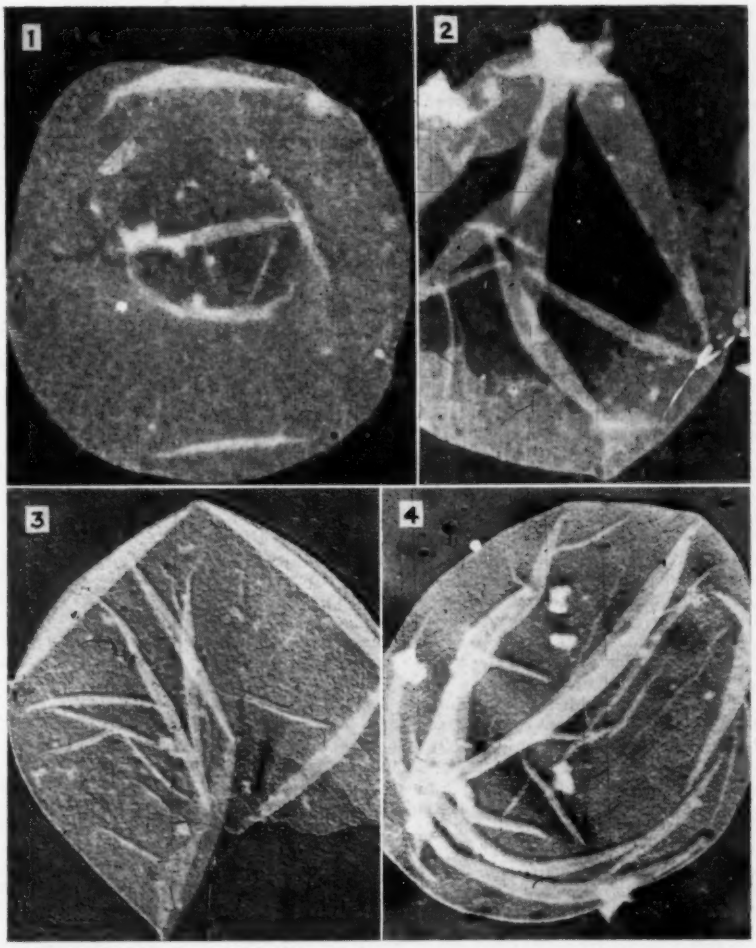
A married woman, aged 35, with one child aged 11 years, and no history of any previous illness of consequence, first noticed hæmoglobinuria in 1943 while she was pregnant. She had it on only one occasion, but she was found, during the puerperium, to have a mild anæmia which did not respond to iron therapy. She remained in her usual health thereafter until August, 1953, when she was admitted to hospital as a contact carrier of *Salmonella typhimurium*. She was given a course of oxytetracycline, after which her stools were negative

for pathogens. She was again found to have an anæmia not responding to iron. Shortly afterwards hæmoglobulinuria recurred, being present in the first morning specimen of urine but not at other times of the day. Her doctor detected slight jaundice, which remained, with some fluctuation, until readmission to hospital in December, 1953. The patient felt tired and weak and had spells of dizziness in the morning lasting about an hour. She knew by a feeling of general malaise when she would pass bloodstained urine. There was no history of anæmia or jaundice in her family or of exposure to hæmolytic drugs.

The patient was a small and slimly built young woman who was pale and had a lemon-yellow tint and a few soft and slightly enlarged glands on either side of the neck but not elsewhere. No enlargement of liver or spleen was detected. No abnormality was found in the cardiovascular, respiratory, nervous, or alimentary systems. The morning urine was the colour of port wine and contained albumin but no bile.

Laboratory Investigations.—Examination of the blood showed Hb 9·8 g. per 100 ml., red cells 3,030,000 per c.mm., and white cells 5400 per c.mm. A red-cell fragility test showed that hæmolysis began in 0·5% solution and was complete in 0·35% (control 0·45% and 0·4% respectively). The blood-group was A Rh D positive. The probable genotype was R2 r (cDE,cde). The direct Coombs test was negative; and, when the patient's serum was tested against a large panel of cells, no irregular antibodies were detected. Ham's test and Crosby's modification of Ham's test both showed strong hæmolysis of the patient's cells by homologous serum, whereas there was no hæmolysis in the control tests. In addition, the patient's cells were incubated with an anti-A serum which contained a weak anti-A hæmolysin; the control cells showed slight hæmolysis, whereas the patient's cells were considerably hæmolysed. The Wassermann and Donath-Landsteiner tests were negative. Between periods of hæmoglobinuria the serum contained small amounts of oxyhæmoglobin and considerable amounts of methæmalbumin. Shortly after the passing of dark urine it contained a large amount of oxyhæmoglobin and a small amount of methæmalbumin. The methæmalbumin was never demonstrable spectroscopically and was only detected by plotting absorption curves on a spectrophotometer. Electrophoresis of the serum did not reveal any abnormality; likewise electrophoresis of the hæmoglobin within the cells revealed no difference in mobility from that of control samples. The dark samples of urine contained variable amounts of methæmoglobin and oxyhæmoglobin. When the urine was freshly passed the amount of methæmoglobin was usually considerable, but on standing it disappeared rapidly, increasing alkalinity converting it to oxyhæmoglobin. The deposit revealed a few hyaline casts, numerous squamous epithelial cells (a small proportion of which contained iron granules within the cells), and very numerous amorphous particles of iron-containing material. No red blood-cells were seen. The urinary excretion of urobilinogen was 3 mg. daily. The fæces were of normal colour. The fæcal excretion of urobilinogen was 238 mg. daily.

Progress.—Hæmoglobinuria ceased spontaneously after five weeks. It has not so far recurred, but there has been no improvement in the anæmia. The patient's general condition remains moderately satisfactory. There have been no thrombotic or infective complications. For these reasons it has not been deemed advisable to give a transfusion of washed cells or anticoagulant drugs which may have a temporary ameliorating effect on hæmolysis.



Appearance of normal and P.N.H. erythrocyte ghosts on electron microscopy: 1, normal erythrocyte unshadowed (× 8000); 2, P.N.H. erythrocyte unshadowed (× 12,000); 3, normal erythrocyte shadowed with Au and Pd (× 8000); 4, P.N.H. erythrocyte shadowed with Au and Pd (× 8000).

Electron Microscopy.—The patient's red cells were examined by electron microscopy, and some of the results are shown in comparison with those of normal cells in the accompanying figure. The cells, obtained from samples prepared as shown below, were separated from plasma or from serum by spinning and hæmolysed with 5, 10, or 30 volumes of water. The envelopes were separated by centrifuging and were treated with 1% osmium tetroxide for 30 minutes. The material was again spun, washed, resuspended to a suitable concentration, and sprayed on to a supporting film for microscopy. Some films were shadowed with gold and palladium at 15°C. The following preparations were examined thus: (1) citrated blood; (2) cells from blood allowed to clot spontaneously; (3) cells from blood defibrinated by shaking with glass beads; (4) cells from blood defibrinated by stirring with a glass rod; (5) as (3) but after allowing the blood to stand for some days before defibrinating; and (6) as (4) but allowing the blood to stand for some days. Samples 4, 5, and 6 were unshadowed. None of the photographs showed any significant differences between normal and P.N.H. cells. There was no evidence

of the spotty or "mesh-like" appearance described by Matthes et al. (1951).

Discussion

The lytic mechanism in P.N.H. has been studied by many workers, notably Crosby (1953) and Crosby and Bell (1951), the current views and the literature being well reviewed by Crosby (1953). It has been shown that both lytic and inhibitory factors are present in normal plasma, but that the abnormality in P.N.H. does not lie in these factors. If P.N.H. cells are placed in normal plasma they tend to undergo lysis, this process being hastened by acidification; normal erythrocytes are not lysed by P.N.H. plasma. This explains why transfusion of a P.N.H. patient with normal blood tends to produce a lytic crisis. The system present in the normal transfused plasma attacks the abnormal cells of the patient. If washed cells only are given, the normal plasma system being absent, no lysis results.

Despite much examination no satisfactory explanation is forthcoming for the widely observed tendency of P.N.H. patients to get lysis during sleep. It has been repeatedly suggested that diminished excretion of respiratory carbon dioxide during sleep reduces the plasma pH (T. H. Ham 1939, G. C. Ham and Horack 1941, Matthes et al. 1951), but the evidence for this is not entirely conclusive (Peterson 1949, Crosby and Bell 1951). From in-vitro experiments Peterson (1949) suggested that carbon dioxide has some specific effect not shared by other acids, but Crosby and Bell (1951) and Ham (1939) could not confirm this. It appears clear that the lytic tendency is associated with sleep as such and not with posture or time of day. Increase of pulmonary ventilation in a respirator during sleep will prevent lysis (Ham 1939, Ham and Horack 1941).

Paroxysmal nocturnal hæmoglobinuria does not appear to be hereditary; only one of a pair of uniovular twins had the abnormality (Crosby 1953). The onset is usually in adult life; the sexes are equally affected. It has been suggested that the disease is due to some unknown sensitisation. Experiment has failed to reveal any abnormality in the hæmoglobin (McIlvanie and Beard 1951 and our own results). The apparently normal condition of plasma and hæmoglobin in this disease points to the red-cell envelope as the seat of the abnormality. Despite the claim by Matthes et al. (1951) to have demonstrated lacunæ and a mesh-like appearance in electron microphotographs of P.N.H. cells, our findings showed no significant difference between P.N.H. and normal cells. Sundharagiati and Wright (1953) found changes similar to those described by Matthes et al. in a variety of blood dyscrasias and believe that these were due to artefacts.

Splenectomy has been found to be useless or even harmful. Treatment with alkali is ineffective (Buell and Mettier 1940), and numerous hormones and drugs have been tried without success by other workers. Crosby (1953) showed that dicoumarin may help. Thrombin destroys the normal heat-stable inhibitor of lysis. By preventing conversion of prothrombin to thrombin dicoumarin inhibits this destruction. In emergency, transfusion with homologous cells washed free from plasma is effective.

Summary

A case of paroxysmal nocturnal hæmoglobinuria is described.

The laboratory findings were characteristic. Some hæmolysis was present even when there was clinical remission. Electrophoretic examination of the hæmoglobin revealed no abnormality. Electron microscopy of the lysed red blood-cells showed no difference between their envelopes and those of normal erythrocytes.

We wish to thank Miss H. M. Laird, of the Beatson Memorial Hospital, for preparing and reporting on the electron microphotographs; Dr. J. Wallace, of the West of Scotland Blood Transfusion Service, for serological examination of the blood; and Dr. David Smith, of Glasgow Royal Infirmary, for permission to examine the patient.

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ON THE SEX OF CANCER AND TERATOMATA CELLS

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A MORPHOLOGICAL sexual difference in the nuclei of nerve-cells of cats was found by Barr and Bertram (1949, 1951); and later work showed that a chromatin mass called "sexual chromatin" or "corpuscle of Barr" is seen in about 75% of nuclei of various tissues in females, but is seldom detected in males (Barr et al. 1950, Graham and Barr 1952).

These findings have been applied to the diagnosis of sex in other animals and in man (Moore and Barr 1954). For instance, nuclear sex has been studied by this method in transvestites (Barr and Hobbs 1954), hermaphrodites (Moore et al. 1953, Barr 1954), and Turner's syndrome (Polani et al. 1954). Using a slightly modified technique, Emery and McMillan (1954) say that, except for some doubtful results obtained in necropsy material in the newborn, the method is reliable when applied to children.

Hunter and Lennox (1954), who examined spinocellular epitheliomata of the skin, conclude that cancer cells are of the same sex as the patient; but, as regards teratomata, 5 out of 9 in males were heterosexual, whereas 12 teratomata in women were all of the same sex as the patient. If this latter finding is applicable generally, we will have to revise our ideas of the genesis of teratomata.

Meanwhile we add to the findings of Hunter and Lennox (1954) and of Cruickshank (1955) our findings in 34 teratomata and 110 cancers.

Method

We used formalin-fixed paraffin-embedded sections 5–8 μ thick stained with hæmatoxylin and eosin, and

TABLE I—SEX OF CANCER CELLS

Tumour	Sex of patient					
	Male			Female		
	Average (%)	no. of cases	Range (%)	Average (%)	no. of cases	Range (%)
Carcinoma of skin	5·9	24	1·5–17·0	7·2·9	27	60–78
Undifferentiated carcinoma of skin	..	2	1·0– 4·0	..	3	27–61
Primary carcinoma of liver	..	1	11·5	..	3	68–74
Adenocarcinoma of stomach	5·6	5	2·5– 9·5	69·8	5	66–74
Papillary carcinoma of bladder	6·4	5	3·0–12·0	70·2	5	67–75
Adenocarcinoma of ovary	..	..	..	73·3	5	69–79
Seminoma of testis	4·0	5	3·0– 5·5	..	..	..
Carcinoma of kidney	7·5	5	4·0–11·0	71·9	5	62–78
Myosarcoma	8·6	8	5·5–15·0	..	2	71–77

TABLE II—SEX OF TERATOMA CELLS

Sex of patient	Sex of teratoma cells							
	Male				Female			
	Hunter and Lennox (1954)	Cruickshank (1955)	Present investigation	Total	Hunter and Lennox (1954)	Cruickshank (1955)	Present investigation	Total
F	..	..	..	..	12	2	25	39
M	4	2	5	11	5	1	4	10
Total	4	2	5	11	17	3	29	49

χ^2 (for 1 : 2 ratio) = 1·929, P = 0·166
χ^2 (for 1 : 1 ratio) = 0·0476, P = 0·962

controls were stained by the Feulgen method. We found fixation to be of greater importance than the method of staining.

Counts were made of nuclei containing the sexual chromatin, as defined by Barr and his colleagues, and percentages were established for at least 200 cells; doubtful nuclei were counted as half-positive half-negative. Immature and degenerated cells were excluded, and only one nucleus was examined in the multinucleated elements so commonly found in cancer.

This method gave statistically significant results ($P = 1 \times 10^{-11}$), with a relatively small standard deviation ($s = 2·5$), in the case of normal skin cells of 40 adults, the sexes being well separated (females 60–80%, males 1–18%) and the two frequency curves showing diverging skewness.

Results

Cancer

In 110 sundry malignant tumours, taken at random for each variety from the cases registered in the department of anatomical pathology in the University of Oporto, the sex of the patient and that of the tumour were the same (table I). The range of results shows no significant difference between normal and cancer cells, and identical percentages were obtained when both were examined in the same section. Neither localisation nor type of neoplasm influenced its "sex"; the only exceptions were two undifferentiated carcinomata of the skin in women; the low figures (27% and 55·5%) may be explained by the immaturity of the nuclei in these neoplasms.

The number of chromatin-containing cancer cells and mature histiocytes in the stroma of the tumour were counted in 20 cases and differed very little ($t = 0·632$; d.f. = 19). The histiocytes proved much more reliable than epithelium, because in the undifferentiated carcinomata mentioned above the histiocyte-counts were 70·0% and 74·5%.

Teratomata

Our findings in 34 teratomata (25 from women and 9 from men) were very similar to those of Hunter and Lennox (1954): all 25 from women were "feminine," whereas 4 of the 9 from men were "masculine." If we combine our findings with those of Hunter and Lennox (1954) and Cruickshank (1955) we find that 48% of teratomata in males are heterosexual. This fact argues against two current theories of the genesis of teratomata: the blastomere theory and that of parthenogenetic division of a diploid cell. On the other hand, not much support is lent to the theory of gamete (or, at least, haploid cell) conjugation proposed by Hunter and Lennox (1954), which calls for a ratio of 1 XX : 2 XY : 1 YY teratomata. According to Moore and Barr (1954) only the pair of XX chromosomes determine the appearance of sexual chromatin. This reduces the genetic ratio to 1 XX : 3 (XY + YY) or, if YY cells do not survive (and we know very little on this subject), to 1 XX : 2 XY. The χ^2 test of departure gives a probability rather close to the statistical level of significance (table II).

The objection that teratomatous material, since it is often either undifferentiated or immature, is unsuitable for this study does not hold, at least for our series; only nuclei from mature epithelial, connective, and nervous tissue were counted. On the other hand, if lack of cell differentiation (which may only cause a depression in percentages, as we have shown) influenced our results, these would be reversed and, heterosexuality would be found in women alone.

A far greater number of teratomata will have to be studied before any theory emerges from these findings. However, one explanation of a 1 : 1 ratio is, perhaps, the parthenogenetic division of haploid cells, followed by chromosome reduplication, forming 100% of XX cells in the female, and 50% of XX and 50% of YY cells in the male. Of course, this means attributing a pair of YY chromosomes to the cells of some teratomata, and we do not know anything about their viability.

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LOCAL TRANSMETATARSAL AMPUTATION IN ARTERIAL INSUFFICIENCY OF THE LOWER LIMB

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ARTERIAL insufficiency of the lower limb is nowadays treated more conservatively than formerly, preserving as much of the limb as is compatible with healing and sound function. In gangrene of the foot amputation at the metatarso-phalangeal joint commonly proves unsatisfactory, and in the past these unsuccessful cases were treated by high amputation. We now attempt to "save" more limbs by local transmetatarsal (ray) amputation.

In the present series of 12 cases involving 14 limbs with gangrene of toes, only one of the five toes was involved in 10 limbs. This suggests that there must be some local fault in the circulation of the affected toe. Our arteriographic studies have led us to believe that gangrene in the arteriosclerotic patient results from multiple blocks, and we suspect that in these cases the final block is in the plantar metatarsal arteries as they pass the head of the metatarsal bones (Rob 1954). Although the toes, unlike the fingers, have both dorsal and plantar digital arteries, it is the plantar arteries that carry most of the blood-supply.

In local transmetatarsal amputation the toe and the head of the corresponding metatarsal bone are removed through an anterior racket incision. The aim is to amputate above the level of the arterial block. Great care must be taken to clear away all splinters of bone since these, if unremoved, delay healing.

Of the 12 patients (9 men, 3 women), whose average age was 61·5, all had diffuse arterial disease and 5 were diabetic. The main manifestations in the 14 affected limbs were: dry gangrene (6 cases), ulceration (5), and

cold blue toe (3); and the average length of history was four months. In 5 cases these manifestations had been preceded by claudication in the calf.

The digits most commonly affected were the first, fourth, and fifth. The numbers affected in the 14 limbs were: first digit, 4; second digit, 1; third digit, 1; fourth digit, 7; and fifth digit, 5.

Foot after local transmetatarsal amputation of right first toe and left fifth toe.

The results at three to fifteen months after operation were as follows: healed, 7 (primary healing 5, delayed healing 2); unhealed, 2; required high amputation, 5. Thus the failure-rate was 36%, which is similar to the 37% in a series of total transmetatarsal amputations described by Warren et al. (1952).

Analysis does not reveal any sign by which failure can be predicted. Failure was unrelated to age, sex, or the presence of diabetes.

This operation is designed to remove as little as possible of the gangrenous limb. McKittrick (1946), McKittrick and Risley (1949), Furste and Herrmann (1948), and others have attempted to achieve this end by total transmetatarsal amputation; thereafter the foot functions well (unlike the state after amputations at the tarsus by the method of Lisfranc and Chopart), and their results are similar to those described here.

After local transmetatarsal amputation the healed foot (see figure) is functionally satisfactory, and the limited follow-up in the series described here shows that the wound remains satisfactorily healed. In 1 of the diabetic patients a perforating ulcer of the foot developed, but the amputation site remained healed.

I am indebted to Prof. George Perkins for introducing me to this operation; to Mr. F. B. Cockett for criticism and advice; to the physicians and surgeons of St. Thomas's Hospital for permission to describe their cases; and to Mr. K. G. Moreman for the photograph.

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Medical Societies

ASSOCIATION OF CLINICAL PATHOLOGISTS

THE 54th meeting of this association was held in Douglas, Isle of Man, on April 13–15. We publish summaries of some of the papers presented at the meeting.

Typing in Epidemiological Investigations

Dr. W. H. BRADLEY said that Griffith had first introduced serological typing of hæmolytic streptococci in 1926, and by 1934 a range of 27 reference types was available. Craigie and Felix had shown in 1938 that bacteriophage typing of *Salmonella typhi* was practicable, and by 1947 they had prepared a couple of dozen reference phages. The significant fall in the mortality of streptococcal disease (particularly puerperal sepsis) between 1934 and the advent of sulphonamides probably reflected the increase in the possibility of outbreak control stimulated by the Griffith's typing.

The mortality of enteric fever in the United Kingdom had fallen away more rapidly than in other European countries, and this improvement coincided with the introduction of phage-typing. Dr. Bradley thought that because typing made epidemiological investigations more convincing and more fun their quality was improved and preventive medicine became more effective. Moreover, epidemiological and ætiological concepts had been reshaped. The rôle of type-12 and to a lesser extent type-4 streptococci in nephritis was an example. It was now realised that the many distinct serological or phage types within a species were acting independently and that their specificity was enduring.

Antigenicity of Toxoids and Sympathomimetic Drugs

Dr. J. UNGAR described how water-insoluble mineral carriers such as aluminium or calcium salts, tapioca, oils and fats, and, recently, bacterial suspensions, had been used to increase the efficiency of prophylactic toxoids and thereby reduce the number of injections required. Their presence caused local irritation, which was most severe with aluminium and calcium salts and least severe with bacterial suspensions; he had used *Hæmophilus pertussis* vaccines successfully in the past.

As the use of vaccines might be undesirable in hypersensitive persons, Dr. Ungar had tried to improve the antigenic efficiency of diphtheria toxoid by altering the rate of absorption with drugs exerting a local tissue effect. Adrenaline hydrochloride (1 in 1000 to 1 in 2000), benzedrine hydrochloride (1 in 250), ephedrine hydrochloride (1 in 250), and histamine (0·5 µg. per ml.) had been used. Two amines, β-phenylethylamine and phenylethylamine acetate, which have no vasoconstrictor action, were included as controls. When tested in guineapigs the sympathomimetic vasoconstrictors greatly enhanced the response to diphtheria toxoid. Combination with histamine caused only slight enhancement and the two control amines did not affect the response to the toxoid. Vasoconstrictors might prove useful for enhancing the efficiency of diphtheria toxoid, especially when children hypersensitive to injections of antigen were being immunised.

Lung Carcinoma in Hæmatite Miners

Dr. J. STEVEN FAULDS said that the incidence of primary cancer of the lung in iron-ore miners in Cumberland over the last twenty-three years was 9·4%—four times that found in a control group of males of similar age and habits, but different occupation. The site of the tumours corresponded to the areas where the characteristic massive fibrosis developed, and the primary lesion was not in the main bronchus, but in a peripheral lung field. The observed association of squamous-celled lining to a chronic abscess cavity and a squamous carcinoma in the same area suggested that the tumour arose in the sidero-silicotic mass. Since silicosis was a frequent finding in other kinds of mining and an association between silicosis and bronchial cancer was not common, it was difficult to give a reason for the increased frequency of carcinoma found in iron-ore miners.

Lower-nephron Nephrosis

Dr. S. SEVITT showed that distal tubular necrosis (lower-nephron nephrosis) in the kidneys of burned patients was commoner among those who had an adequate or normal flow of urine than in those with severe oliguria or anuria. Clinically and biochemically there were uræmic and non-uræmic forms with little or no oliguria. The uræmic group was important to diagnose because the recent advances in therapy may reduce its high fatality. Morphologically these kidneys showed a *diffuse* distal tubular neurosis in which hæmoglobin casts were prominent. Many nephrons were involved and although the morphology was no different from that found in those with anuria or severe oliguria, tubular function was impaired.

The finding of non-oliguric uræmia in an injured man with histological distal tubular necrosis of the kidneys indicated that the phenomenon was not restricted to burned subjects. In the non-uræmic condition there was no significant azotæmia during the illness, and death was due to non-renal complications. Histologically the kidneys of these patients should show either a *focal* type of distal tubular necrosis, associated with few casts and affecting only a minority of the nephrons, or the healing or healed evidence of a recent focal attack.

Blood-ammonia Levels in Liver Disease

Mr. A. G. RIDDELL described experiments on dogs with portacaval anastomoses which had shown that a neurological disorder can be produced in these animals by intoxication with ammonia. Histological examination of the brains of these dogs showed the same change in the protoplasmic astrocytes as in patients dying in hepatic coma. In hepatic coma a raised blood-ammonia level was found. The type of hepatic coma that followed bleeding from œsophageal varices was analogous to the syndrome seen in dogs; and the ammonia was derived from the blood in the alimentary tract. While blood-ammonia determinations were required in the diagnosis and management of unusual cases, they were not required in the routine treatment of hepatic coma.

Fibrinous Vasculosis

Dr. A. C. LENDRUM suggested this term for the deposition in blood-vessel walls of a material giving the staining reactions of fibrin. The commonest cause of this was severe stagnant ischæmia, as in infarction or torsion. Other causes were drug-induced hyperergic arteritis, extreme hypertension, polyarteritis nodosa, and occasionally acute rheumatic disease, disseminated lupus erythematosus, and dermatomyositis. The fibrin was commonly seen under an intact endothelium, sometimes as a complete ring round the intima. From this level it either seeped into the wall (vessels of infarcted zone), or was injected across the media (in extreme hypertension) to spread out along the external elastica, through which it may erupt focally. At sites where a layer was traversed, there was in all types of fibrinous vasculosis a stretching and distortion of the nuclei as if they had been subjected to mechanical extension. Gross cellular aggregation was seen in and around a few, some, or all of the affected vessels. Intravascular thrombosis was uncommon except in small vessels, even when the vessel wall was a mass of fibrin.

The most extreme degree of fibrinous vasculosis had been seen in the pulmonary vessels in 2 cases of mitral stenosis; and the next degree in infarcted organs. The three forms of fibrinous vasculosis, the stagnant, hypertensive, and hyperergic, appeared to be histologically indistinguishable. All might be regarded as a form of exudation due to an upset between the pressure in the vessel and the permeability of the lining.

Hæmophilia and Christmas Disease

Dr. ROSEMARY BIGGS, discussing the diagnosis of these conditions, said that the laboratory tests of clotting function that have been used were the whole-blood clotting-time, the prothrombin-consumption test, and the thromboplastin-generation test. In hæmophilia the clotting-time was prolonged in more than half of the patients, but patients who are quite severely affected may have a normal clotting-time. Similarly, the prothrombin-consumption test usually gave abnormal results in hæmophilia, but with some samples results were normal. The thromboplastin-generation test gave more reliable results in hæmophilia blood than either of the other tests, and using this technique it was possible to distinguish patients with hæmophilia from those with Christmas disease. About 10% of patients previously diagnosed as having hæmophilia were found to have Christmas disease. Of the patients with Christmas disease, many were rather mildly affected with a normal clotting-time and consumption of prothrombin.

Interstitial Emphysema in the Newborn

Dr. JOHN L. EMERY, in a consecutive series of 100 infants dying within seven days of birth, had found that 7 out of 52 full-term children had died with interstitial emphysema. After congenital deformities it was the commonest single cause of death. The condition was spontaneous and not due to artificial respiration; it was probably caused by the expulsive efforts of crying in lusty infants who had inhaled vernix or mucus.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM

Diamox in the Treatment of Glaucoma

THE 75th congress of the Ophthalmological Society of the United Kingdom, held in London on April 28–30, included a symposium on 'Diamox' in the Treatment of Glaucoma. Diamox (2-acetylamino-1,3,4,-thiadiazole-5 sulphonamide) has been known for some years to have a powerful inhibitory effect on the enzyme carbonic anhydrase, and it has been used in the treatment of congestive heart-failure because of its diuretic effect.[1]

Mr. E. S. PERKINS analysed the results in 58 cases treated at Moorfields Eye Hospital, and confirmed the value of this drug in controlling all of the major categories of glaucoma; in about 50% of all cases—congestive glaucoma, simple glaucoma, and glaucoma secondary to iritis and to trauma—the tension was brought well under control, while of the remaining cases about half were controlled partially or for a short period. This effect was potentiated by the simultaneous use of miotics. The dosage suggested was 500 mg. initially followed by 250 mg. six-hourly; after a few days this dose could generally be reduced to twice or thrice daily, at which level it should be maintained. Side-effects were rarely disturbing; diuresis and paræsthesiæ were usually very transient. Mr. Perkins concluded that the particular value of diamox was in the control of acute congestive glaucomatous crises, where it allowed the eye to quieten for a subsequent drainage operation; in certain cases of simple glaucoma where miotics had failed to achieve effective control; and in cases of iritis glaucoma in which the tension could be controlled until the initiating iritis had been allayed.

Dr. JOHN GLOSTER described his estimation of the effect of diamox on the intra-ocular pressure of normal rabbit eyes. He found that an intravenous injection of diamox caused a drop in the intra-ocular pressure within one minute; the speed of this action suggested that it was due to a direct effect on the secretion of aqueous humour in the ciliary body. The changes, estimated by the insertion of a cannula into the aqueous, were significant only with doses larger than those used clinically.

Dr. MAURICE LANGHAM reported the results of further experiments on rabbit eyes. Observations were made first on the effect of diamox on the distribution of bicarbonate between the aqueous humour and the plasma, since it might be assumed that the inhibition of the production of hydroxyl ions would decrease the osmotic pressure of the aqueous and thereby reduce its formation. The influence of the drug was assessed according to the permeability of the blood-aqueous barrier and the flow of the aqueous humour, by measuring the rate of accumulation of fluorescein in the aqueous humour after intravenous administration. It was found that, although the bicarbonate in the aqueous diminished after the administration of diamox, its concentration relative to that in the plasma was unchanged. The method by which diamox reduced the formation of the aqueous thus remained uncertain; the results of his experiments did not show whether diamox in fact exerted its effect by its systemic action or through a non-specific inhibition of aqueous secretion.

Prof. G. P. SOURDILLE (Nantes) reported clinical observations which agreed essentially with those described by Mr. Perkins.

1. See *Lancet*, April 2, 1955, p. 706.

Reviews of Books

Practical Obstetric Problems

IAN DONALD, M.B.E., M.D. Lond., M.R.C.O.G., regius professor of midwifery, University of Glasgow. London: Lloyd-Luke. 1955. Pp. 578. 45*s*.

IN many ways this is an admirable book; but it is not addressed consistently to any particular group of readers, and one cannot easily say just what kind of book it is. The title and part of Professor Donald's preface suggest that it is largely a reference work for the practising obstetrician; but, though the practising obstetrician will find much profit and enjoyment in its discussion of controversial problems, it leaves out things one would expect it to contain. It is not a textbook, for the anatomical and physiological ground-work of obstetrics has been deliberately omitted. Perhaps it will be of most value to those who have a little experience of obstetrics and are sitting a higher examination —though these will have no need of the details of simple obstetrical procedures (such as toilet of the vulva before forceps delivery) nor of some of the discussions of matters that belong to undergraduate rather than postgraduate teaching.

The points at which fellow experts will take issue with the author mostly concern manipulative obstetrics. In the section on manual correction of the fœtal head in the occipito-posterior position, a good method is described for altering the fœtal position, but no reference is made to the alternative techniques, such as rotating the shoulders by the internal hand or correcting the malposition by placing the hand over the fœtal face. In the section on breech delivery the description of the rotation of the anterior shoulder posteriorly does not mention the desirability of over-correction if the back of the fœtal head is to remain directed to the symphysis. The statement that "the lateral position for forceps delivery has been abandoned" takes no account of those who are convinced that the lateral position confers at least the two advantages of a reduced risk of anæsthesia and less perineal damage. Some, too, will disagree with the opinion (on twins) that "if a general anæsthetic has been necessary in the course of delivery of the first child it is usually preferable to discontinue it while awaiting the arrival of the second." Sweeping statements such as "Cæsarean myomectomy is an indefensible operation" and "undoubtedly" routine X-ray pelvimetry in all primigravidæ "will come in time" belong perhaps to the cut-and-thrust of debate rather than to the printed page.

Against these objections must be set the important fact that the book conveys much of the author's zest. Some of its parts, and some of its sentences, are too long; but it is often very readable. Many will be grateful for its robust, uncompromising approach, and above all for its stimulating enthusiasm.

Memoirs of My Nervous Illness

DANIEL PAUL SCHREBER. Translators and editors: IDA MACALPINE, M.D.; RICHARD A. HUNTER, M.D., M.R.C.P., D.P.M. London: Wm. Dawson. 1955. Pp. 416. £1 15*s*.

AUTOBIOGRAPHICAL accounts of mental illness are valuable documents, especially when written by patients of high intelligence, gifted with powers of self-observation and accurate recollection. These qualities were undoubtedly possessed by Daniel Schreber, a judge of the supreme court in Saxony, who developed a severe schizophrenic illness in late middle life. His account of his experiences in this illness, first published in 1903, was the subject of a study by Freud eight years later. Freud's paper has become important in the development of psycho-analytic theory about psychoses, and the Schreber memoirs are often mentioned, but usually by people who have not read them, because the book has become scarce and has never been translated from German. Dr. Macalpine and Dr. Hunter have now made good this deficiency.

Their translation does not always run smoothly, but it may well be a faithful reproduction of Dr. Schreber's style. Schizophrenics do not write with terse and graceful precision, nor perhaps do judges, and the reader is willing to accept the translators' disconsolate reference to Schreber's cumbersome and involved language. They give examples of his neologisms in an appendix. They have fallen into a few well-known traps—such as translating *Moment* as "moment" instead of "factor"—but these are trifling blemishes in a large undertaking. Besides the memoirs, the book contains a clinical and historical introduction by Dr. Macalpine and Dr. Hunter, a reprint of their informative psychopathological article on the Schreber material, and translations of the psychiatric reports on Schreber, the legal statement in which he asked to be given back control over his affairs, and the judgment of the court which heard this appeal.

The translators ride a few hobby-horses, as their incidental polemic against physical forms of treatment shows, but the grateful reader will not begrudge them this by-product of their labours for his benefit; he may even, unless an orthodox psycho-analyst, find their irreverent re-examination of some central issues of Freudian psychopathology stimulating.

Examen clinique et traitement d'un endocrinien

A. LICHTWITZ and R. PARLIER, Hôpital Lariboisière, Paris. Paris: L'Expansion scientifique française. 1954. Vol. I. Pp. 456. Fr. 5200. Vol. II. Pp. 392. Fr. 4800.

To apply recent advances in endocrinology demands some understanding of the experimental techniques which produced them. Doctors are often ill equipped by their training to follow the methods of diagnosis and treatment that have evolved. Dr. Lichtwitz and Dr. Parlier, in this frankly didactic account of endocrinology in its modern setting, have, by their attention to layout, tables, and diagrams, done much to explain the scientist's findings to the clinician. In the preface they write: "We hope the jealous guardians of pure biological science will pardon certain abuses of simplification, remembering that our aim is to reach not only those doctors who wish to perfect their knowledge of modern endocrinology, but all those who are harassed by the problems of general pathology." But the questioning and thoughtful reader may be disappointed.

Dr. Lichtwitz and Dr. Parlier deal first with some general principles and then with the hypophysis, the thyroid, the ovary, and, in the second volume, with the testes and the suprarenal. Throughout, the influence of Selye makes itself strongly felt. The book is a useful guide to the French literature and in particular to the authors' many original articles. It is lavishly produced, and misprints are mostly in the references; but the index is unfortunately sketchy.

The Challenge of Man's Future

HARRISON BROWN. London: Secker & Warburg. 1954. Pp. 290. 21*s*.

Prof. Harrison Brown is a chemist with an expert's knowledge of the earth's material resources, an American's optimism about human capacity, and a citizen of the world's awareness of the rake's progress and the fateful hour. Like Sir Charles Darwin he sees the ultimate consequence of an uncontrolled growth of population and a spendthrift use of our resources, but he is not convinced that there is no escape from this doom.

He foresees three possible patterns of life: reversion to the agrarian existence of the pre-industrial period; a completely controlled, collectivised industrial society in which war has been abolished, new energy sources are utilised, and population is kept stable; a world-wide free industrial society, labile but capable of permanence. The last, the most desirable and to our favoured Western minds the expected outcome of "progress," is the most difficult to achieve since it requires efforts beyond anything human beings have so far compassed. They must adapt themselves to constant change, preserve freedom while accepting control of reproduction, aggression, and other old desires, and use their intelligence and self-restraint now in order to conserve their dwindling extra-human resources and so turn to most use their inner resources of wisdom and generosity. Though this is the conclusion of the matter, and gives only chastening comfort, it follows a well-organised factual account of what is happening and what must later happen if we continue in our present courses: the account is objective and the main argument irrefutable.

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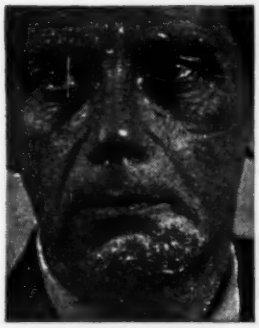

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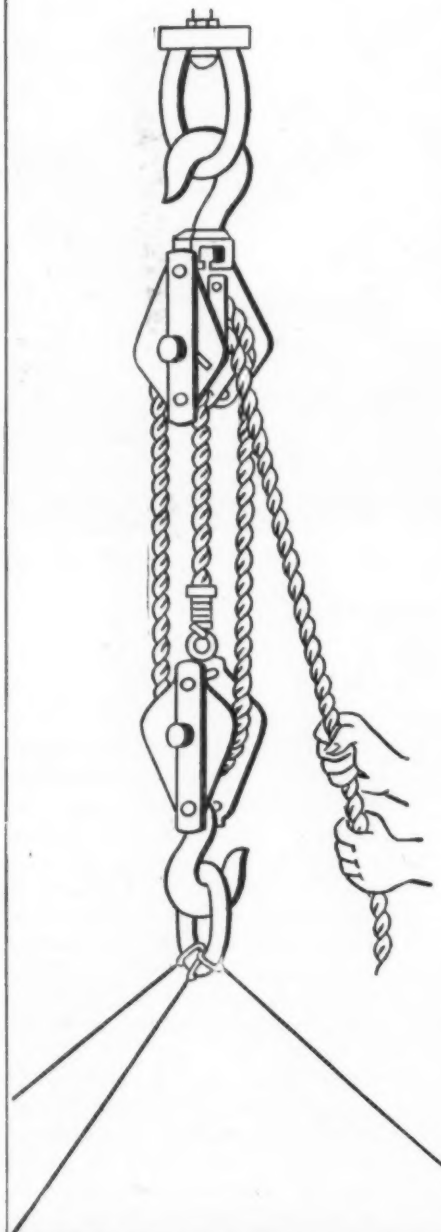

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THE LANCET

LONDON: SATURDAY, MAY 7, 1955

Research in General Practice

"There is a danger inherent in the work of general practice that the very great variety of subjects for practice and thought in a day's work may lead to a superficial and desultory curiosity rather than an eagerness for study."

WHEN he offered this reflection in the first John Matheson Shaw lecture[1] of the Royal College of Physicians of Edinburgh last November, Prof. JAMES MACKINTOSH was discussing the opportunities for research now opening before general practitioners. A Sassenach might have softened the blow with some reference to the fatigues of the family doctor's day; but Professor MACKINTOSH merely added that "it is easy to spread a thin layer of butter on the bread of idleness." This bracing approach has much to commend it, for some of the past attempts to get general practitioners to contribute to research have started hopefully but died of inanition. Too often self-chosen projects lose their charm for men working in isolation, especially during winter epidemics. Modern research is often done best by a team, and the College of General Practitioners[2] is surely right in encouraging group projects, while at the same time offering information and help to the investigator who prefers to work alone.

At the end of 1954, the register of members willing to take part in research, maintained by the research committee of the college council, contained some 380 names, sent in from every part of the Commonwealth. Research committees of 22 faculty boards have been formed, in the British Isles and overseas, composed of members and associates of the college and also coöpted members from local university or medical-school research departments. The college research advisory panel, composed of experts in various medical fields, has been strengthened during the year. Scotland has its own research committee of the Scottish council, with its own research advisory panel.

Four types of general-practitioner research are being forwarded: college-sponsored investigations, studies by groups of doctors, faculty-sponsored investigations, and individual investigations. The college-sponsored investigations deal with subjects which can be studied only in general practice, or studied there better than in hospitals or laboratories.

A measles investigation, to assess the value of sulphonamides and antibiotics in preventing complications is already in progress, and has only been handicapped (the report remarks sadly) by the low incidence of measles in 1954. Better things are expected of 1955, and a report may be published by the end of the year. A national morbidity survey is being planned in collaboration with the Registrar-General's department; and a college records unit is being set up which should enable morbidity statistics to be recorded in a comparable way throughout the United Kingdom and overseas. Discussions with the Ministry of Health have resulted in the release of National Health Service records of dead patients to doctors needing them for research purposes. It has been suggested that clinical trials of therapeutic substances might be made by general practitioners, but this introduces some ethical problems to which the college is rightly giving serious thought. Finally the epidemic observation unit of the college has coöperated with the Public Health Laboratory Service in collecting specimens from suspected cases of influenza, for identification of the virus. Through this unit one member of the college has already brought to light an outbreak of Q fever in the South-West; and specimens from a recent outbreak of infective hepatitis in the South-East have been collected and studied.

Among the study-groups, one is engaged in observing the clinical patterns of acute respiratory infections; another, interested in hereditary diseases, is examining the incidence of hypertrophic pyloric stenosis in the children of people who have themselves survived Rammstedt's operation; a third group is investigating the value of tonsillectomy; a fourth, interested in psychosomatic disorders, is making a study of asthma and migraine; and a fifth small group is concerned with asthma in children.

Faculty-sponsored investigations include one into obstetrical work in South-West England; a study of the symmetry of heads of babies in Northern Ireland, to determine whether cranial asymmetry is related to right-handedness or left-handedness; a study, in Yorkshire, of the course of cancer in patients who for one reason or another have not been treated; and an epidemiological survey in South East England of non-notifiable diseases, including glandular fever, infective hepatitis, and epidemic winter vomiting.

These studies have been started with great enthusiasm; but the college has it in mind, from the history of earlier collective investigations, that too great a dispersal of effort may lead to disappointment; and moreover (Professor MACKINTOSH notwithstanding) that there is a limit to the amount of voluntary work a family doctor can undertake over and above his practice. They are therefore wisely planning rather to consolidate the research work begun than to expand into new fields during the coming year.

It is interesting to compare this promising beginning with the research programme Professor MACKINTOSH foresees for general practitioners in years to come. The Public Health Laboratory Service, as he points out, has greatly added to their powers to contribute to systematic research; and he hopes that before long a more organised system of diagnostic centres will be developed and take the place of the health centres —"which are now by general consent slipping back into the waters of Lethe." These, like the Nuffield diagnostic centre at Corby,[3] would be staffed by technicians working under the supervision of specialists; and here general practitioners would have direct access to technical help in the more straightforward types of bacteriology, radiology, and pathology—or could, if they wished, undertake laboratory procedures themselves.

First in his list of possible studies Professor MACKINTOSH puts hereditary defects and diseases; for family doctors, and especially old-established firms of doctors, have a better chance than most of noticing what happens from generation to generation. They can assess the significance of the eccentric relative and the slow child; can turn up records of stillbirths, neonatal deaths, minor congenital abnormalities, hæmophilia, Huntington's chorea, and pyloric stenosis; can observe the effects of common complaints on patients and their environment; and can assess the long-term effects of remedies, old and new, and the protective value of vaccines. They alone have the

1. Research in General Practice. Edinburgh: Royal College of Physicians. 1955. Pp. 58.
2. Second Annual Report, 1954. Pp. 166.
3. *Lancet*, 1954, i, 871.

chance of seeing the onset and full course of the diseases associated with old age, and can investigate both the basic and the precipitating causes of the so-called stress diseases. They have remarkable opportunities, of which many of them make full use, of gaining skill in prognosis; and many a young doctor joining an old firm is startled out of his scientific calm by the uncanny skill of the senior partner in predicting the immediate and remote outcome of disease. As Professor MACKINTOSH says, the true effects of pregnancy on chronic disease are largely unknown at specialist level. Again, though the gross pathology of established disease can be seen and learned in hospital, the delicate innuendos of early disorder are to be apprehended only in general practice. They are learned by watching the same patients for a lifetime. Mental sickness, which sometimes has its origins in human relations, gives the general practitioner another field for study: "The observation of years in a mental hospital or psychiatric clinic may not reveal as much about such patients in their true environment as the general practitioner learns in the course of his daily plodding"; and he it is, at present, who undertakes most of the follow-up and aftercare of patients who have been treated in mental hospitals. Epidemiology still has many questions to be answered: some incubation periods are still uncertain, and the modes of spread of many diseases are far from clear. Professor MACKINTOSH notes the work in this field already being undertaken by the college, but mentions other possible inquiries—not only into the well-known infections such as chickenpox, herpes zoster, and poliomyelitis, but into local non-infectious diseases such as goitre and dental caries; and into chronic disorders such as rheumatism and bronchitis. Finally, he suggests there is plenty still to study in the field of normal health and physiology—the disturbances of puberty and the menopause, the male climacteric, the onset of presbyopia, the significance of bodily and emotional types, and "the long fascinating story of child development."

So much for the programme: but there are, he hints, obstacles. The first is the medical curriculum, which not only fails to prepare the student for research under the conditions of medical practice but introduces him mainly to the late stages of disease, gives him the scantiest notions of the relations of sickness to social and industrial life, and does not equip him with enough elementary statistics to conduct simple investigations in the field of general practice. Given an early understanding of statistical methods and of the importance of controls he would quickly recognise how little is other apparatus needed for important work: two eyes, a pen, and a record-card often suffice. Other obstacles are the want of liaison between general practitioners and consultants, the scarcity of leisure, the broken time, the prejudice of patients ("people in general have a respect almost amounting to awe for research, but they do not enjoy being the subjects of investigation themselves"), and the absence of a stimulating atmosphere, such as is found in hospital or laboratory. But all these obstacles, he urges, can be overcome. The college is already playing its proper part by giving help and guidance (particularly in the matter of collecting accurate statistics), by organising research teams and groups, and by keeping keen people in touch with one another and with experts in their subjects. Other incentives must come from elsewhere—from the medical schools, which must equip their students better for research; from the Ministry of Health, which can distribute information about minor disorders (bronchitis, common colds, and the neuroses) which are responsible for much ill health, and as a by-product from group practice, which gives the doctor time for reading, writing, attending clinical meetings, looking after his own health; and developing more fully his skill in his profession.

Cell Type in Bronchial Carcinoma

NO-ONE would suggest that surgery is an adequate weapon in the treatment of bronchial carcinoma, but it is the best we have; and with modern technique roughly one quarter to one third of patients who have "curative" resections survive operation by at least five years.[1–6] It is now clear that the prognosis in these cases is greatly influenced by the cell type of the tumour.[5–8] Bronchial carcinoma is usually classified histologically as squamous cell, adenocarcinoma, or undifferentiated; but KIRKLIN et al.[6] consider that it is worth subdividing the undifferentiated group into small-cell carcinoma and large-cell carcinoma. The cells in small-cell carcinoma have little cytoplasm, they are irregularly arranged, and as the nuclei are often spindle-shaped the term "oat-cell" is commonly applied to this group. The cells in KIRKLIN's large-cell type have more cytoplasm, but the other histological features are variable, sometimes resembling those of the small-cell variety and sometimes those of the squamous-cell type, so that pathologists recognising only three groups would put them in one or other of these categories.

The prognosis in the small-cell (oat-cell) type is very poor, though occasional good results are achieved. On the other hand, the outlook in the squamous-cell variety is relatively good.[5–8] There is more doubt about the prospects with an adenocarcinoma; KIRKLIN and his colleagues,[6] for example, consider that the chances of a successful operation are almost as good as with a squamous-cell tumour, whereas HOLMES SELLORS's experience[5] has been that the chances are not much better than in the deadly small-cell group. The prognosis in the large-cell variety is poor, though it is apparently somewhat better than when the tumour is of the small-cell type.[6] Moreover, squamous-cell carcinoma means more than a better chance of survival after a "curative" operation, for a higher proportion of such growths are amenable to surgery when first diagnosed[6 8]; so that at first sight it seems fortunate that in most analyses of the results of treatment in bronchial carcinoma this variety is commonest. But, as BIGNALL has lately pointed out,[9] it is the highly malignant small-cell

1. Churchill, E. D., Sweet, R. H., Soutter, L., Scannell, J. G. *J. thorac. Surg.* 1950, **20**, 349.
2. Ochsner, A., De Camp, P. T., De Bakey, M. E., Ray, C. J. *J. Amer. med. Ass.* 1952, **148**, 691.
3. Gibbon, J. H. jun., Allbritten, F. F. jun., Templeton, J. Y., Nealon, T. F. jun. *Ann. Surg.* 1953, **138**, 489.
4. Boyd, D. P., Smedal, M. I., Kirtland, H. B. jun., Kelley, G. E., Trump, J. G. *J. thorac. Surg.* 1954, **28**, 392.
5. Sellors, T. H. *Brit. med. J.* 1955, 1, 445.
6. Kirklin, J. W., McDonald, J. R., Clagett, O. T., Moersch, H. J., Gage, R. P. *Surg. Gynec. Obstet.* 1955, **100**, 429.
7. McDonald, J. R., McBurney, R. P., Carlisle, J. C., Patton, M. M. *J. thorac. Surg.* 1951, **22**, 62.
8. Ehler, A., Stranahan, A., Olson, K. B. *New Engl. J. Med.* 1954, **251**, 207.
9. Bignall, J. R. *Lancet*, April 16, 1955, p. 786.

tumour which preponderates in necropsy studies, and this discrepancy may be explained by the fact that it is the potentially operable cases which go to the special centres from which statistics of survival-rates usually come.

It is difficult to get reliable information about the actual proportion of all cases which are suitable for surgery when first diagnosed, but it is safe to say that it is depressingly low. Can the position be improved? Nothing can be done about the most decisive factor influencing survival—the cell type of the tumour—but there is a chance to reduce the delay between the appearance of symptoms and diagnosis. Even so, it is doubtful whether any sizeable improvement in the situation would follow, and experience so far suggests that mass radiography [8 10] has no striking contribution to make towards a reduction in mortality. Indeed, BIGNALL came to the sombre conclusion that, even with the most efficient medical service possible, we could not, with present methods of diagnosis and treatment, hope for any substantial improvement. He suggests that we should aim at more effective palliative remedies, and it is only necessary to consider the vast sum of human suffering involved to appreciate the value of any such advances.

A Century of Army Pathology

THE story of pathology in the Army is one of small beginnings, big opportunities, distinguished achievements, and heavy responsibilities faithfully discharged. At the centenary of the service last week there was no lack of great names to honour or fine work to recall; but above all there was a sense of this work continuing. Nor is it limited or separate from work elsewhere. Nowhere more than in pathology is there interchange between Army and civilian medicine; and the mixed gathering at the Royal Army Medical Corps Headquarter Mess on April 27 was evidence of a symbiosis which has been particularly happy and always beneficial.

The day was chosen because it was on April 27, 1855, that Dr. R. S. D. LYONS, an Irish physician, and his "two able assistants," Dr. WILLIAM AITKEN and Dr. DOYLE, were sent their instructions on the pathological researches they were to undertake at Scutari among the sick and wounded of the Crimea. In his centenary article on the service Major-General SACHS [11] quotes these instructions:

> "4. As Morbid Anatomy is of little value unless studied in connection with the history of the disease, you and your Assistants will require to visit the Hospital wards in order to become acquainted with the symptoms and characters of the diseases during their progress; but you will not interfere with the treatment of the patients. In making notes of the cases, the name of the patient, and the number of his regiment, should always be stated, as by this means the nature of his duties, and the place where he was first attacked by disease can be more easily ascertained."
>
> "6. It is expected that you will not content yourself with the simple dissection of the subject, and the demonstration of the morbid parts, but that you will submit them to microscopical examination."

Even at this early date, in an era when little was known about the staining of tissues, the importance of the microscope is usefully emphasised; and the instructions are well drawn. Less understanding was shown by the War Office when for years it blocked the plans made by FLORENCE NIGHTINGALE for a school of military hygiene; and when at last, in August, 1860, the Practical Army Medical School was opened at Chatham the first 10 students found bare walls and no equipment. Nevertheless it was not long before the school, as the Army Medical College at Netley, redeemed its bad start. Its professor of pathology from 1860 to 1892, Sir WILLIAM AITKEN, F.R.S., became the father of military pathology and was to make considerable contributions to medicine through his pupils. Thus the roll of his assistant professors includes Surgeon Major TIMOTHY LEWIS (F.R.S.-elect when he died at 45), Sir DAVID BRUCE, F.R.S., and Sir DAVID SEMPLE. He was succeeded by Sir ALMROTH WRIGHT, F.R.S., who in 1903, when the college came from Netley to London, was in turn succeeded by Sir WILLIAM LEISHMAN, F.R.S. In 1914 and again from 1919 to 1921 the chair was was held by Colonel S. LYLE CUMMINS.

In the decade preceding the first world war the value to the Army of a well-organised pathology service was gradually recognised, and the training of regular Army pathologists proceeded steadily, with research by teams as well as individuals. The war saw the development of mobile bacteriological laboratories, hospital laboratories, and research laboratories, and classical work was done on wound sepsis, tetanus, gas-gangrene, shock, and many forms of infectious disease. The war also showed the need for a degree of central direction of all these vital undertakings, and in 1919 the Pathology Directorate was founded at the War Office with LEISHMAN as first director, assisted by DAVID HARVEY and A. C. H. GRAY. At the same time the Army Pathology Advisory Committee came into being—a body to which Sir FREDERICK HARRIS, director-general of Army Medical Services, paid a special tribute last week. (Among its original members was Dr. MERVYN GORDON, F.R.S., who attended every one of the seventy meetings during his lifetime.) Under these arrangements development continued and research flourished, especially in the '30s. In India the pathology service profited greatly from the energy and drive of Major (now Major-General) JOHN MANIFOLD. Also in India, J. S. K. BOYD, F.R.S., made his observations on dysentery bacilli, and L. T. POOLE worked with H. E. SHORTT of the I.M.S. on the virus of sandfly fever. At the Royal Army Medical College MARRIAN PERRY was collaborating with H. T. FINDLAY and H. J. BENSTED on virulent typhoid strains in the production of vaccines; and BOYD investigated the dosage and administration of tetanus toxoid.

In 1939 the Army had a well-developed and efficient pathological service capable of rapid expansion. Under the directorship of Major-General PERRY, the formation of an Army Blood Transfusion Service was undertaken by Sir LIONEL WHITBY, who, with such lieutenants as G. A. H. BUTTLE, W. D'A. MAYCOCK, and G. T. L. ARCHER, made it one of the outstanding achievements of medicine in the war. In 1941 Major-General POOLE, succeeding PERRY as director of pathology, took over a task now made immensely intricate by the requirements of large Forces in widely separate theatres of war and by the need to arrange and assist many kinds of urgent research by

10. Boucot, K. R., Sokoloff, M. J. *Amer. Rev. Tuberc.* 1954, **69**, 164.
11. Sachs, A. *J. R. Army Med. Cps*, 1955, **101**, 100.

many different kinds of group. How well that task was performed, by him and his assistant Lieut.-Colonel BENSTED, is known to many colleagues in all departments of medicine, who were thankful for his combination of high standards with a receptive mind and readiness to help. After his retirement in 1945, the directorship was filled, for shorter periods, by Brigadier BOYD, by Brigadier FINDLAY, and by Major-General SACHS, from whose lecture at the college on April 27 we have drawn many of the facts of this outline. Since 1953 the director has been Brigadier ARCHER, who arranged this memorable commemoration and at last week's dinner gave what he called the primary response to the toast of the Army Pathology Service proposed by Sir LIONEL WHITBY. This is a toast with which a great many people have reason to associate themselves—even though they may never have heard of the service.

Annotations

POLIOMYELITIS VACCINATION

MISGIVINGS about the new poliomyelitis vaccine,[1] lately put into extensive use in the United States, have been aggravated by last week's news that a number of children have fallen ill with paralytic poliomyelitis shortly after vaccination. It is reported that 35 children have had paralytic poliomyelitis within a short time of vaccination,[2] and 2 have died. Almost all these children had been injected with vaccine prepared by the Cutter Laboratories, of Berkeley, California, and supplies from this manufacturer have been recalled. In the States of Idaho and California the immunisation programme has been stopped for the time being. In Washington the situation has been examined by a group of advisers, including Dr. Salk, and they have recommended that inoculations should continue.[3] About 4 million people, nearly all children, have so far had a first injection. In this country the Medical Research Council decided on Monday that their trials would not start until fuller reports of the American results were available.

There are three possible explanations of what has happened. First, the children may have been going to get poliomyelitis anyway, and vaccination was too late to have any preventive action. Second, the children may have been carriers of poliomyelitis virus, and vaccination acted as a provoking stimulus in a similar way to pertussis and diphtheria immunisation. Third, the vaccine may have contained live virus. At present there is not enough evidence to decide which explanation is correct, but the third seems the most likely. As there is nothing definite to suggest that vaccine manufactured by other laboratories is liable to produce paralytic poliomyelitis, it may be that the virus in certain batches of the Cutter vaccine had been incompletely inactivated.

If it should turn out that the vaccine contained live virus two important questions must be considered. Did the Cutter laboratories follow closely the technique of inactivation by formaldehyde recommended by Salk? It seems unlikely that any firm would knowingly vary the procedure, and if these methods were in fact closely followed the margin of safety of this technique should be re-examined. In particular, there should be a thorough scrutiny, in a number of different laboratories, of the kinetics of inactivation of all three types of poliomyelitis virus by formaldehyde under various conditions. The second question concerns the tests of safety which were applied to this particular vaccine. Previously, vaccine had been tested to exclude the presence of live virus by tissue-culture techniques and by intracerebral inoculation of monkeys. If the tests carried out on the suspect vaccine were not as rigorous as those applied during last year's vaccination trial, the remedy seems clear. Many thousands of children received the Cutter vaccine; so the relatively small number of cases of paralytic poliomyelitis may mean that only a few infective virus particles remained in the vaccine. On the other hand, if the vaccine passes the safety tests but is still suspect on the grounds of a statistical analysis of the incidence of poliomyelitis following its use, then we must think again about the safety tests. Is it wise to apply the results of tests with scores of monkeys to the vaccination of hundreds of thousands of children? We hope that it will not be necessary to make these further inquiries, and that the postvaccination cases may turn out to be unrelated to the vaccine. But at the moment it seems unlikely that the vaccine will escape all blame.

1. *Lancet*, April 23, 1955, p. 851.
2. *New York Times*, May 1, 1955.
3. *Times*, May 2, 1955.

ANÆSTHESIA IN OBSTETRICS

THE advances in anæsthesia in the past few years have usually been accompanied by administrative steps which have made the new techniques available to almost every patient who has to have an operation in this country. But this scarcely applies to anæsthesia in obstetrics, and there are good reasons to reconsider the position in this branch of anæsthesia, as was done at a meeting of the section of obstetrics and gynæcology of the Royal Society of Medicine on April 22.

There has been some uneasiness about an apparent increase in maternal deaths due to anæsthesia; but this may well be only a relative increase, brought about by a fall in the number of deaths from other causes. One danger lies in giving general anæsthesia to a patient who has not been properly prepared for it; the mother is sometimes given food and drink almost up to the last moment, and there is occasionally, after prolonged labour, a gastric atony and a stomach full of fluid, which can remind the anæsthetist of paralytic ileus or intestinal obstruction. Again, these anæsthetics are not always given by those thoroughly familiar with the drugs they are using, or with the particular points on which to concentrate during the administration. Wherever anæsthetics are given to mothers in labour, suction apparatus should be close by, and the delivery table should be one which will tip both head up and head down. The head-up position, with the use of a relaxant drug and the passage of a cuffed endotracheal tube, is perhaps the safest method in experienced hands. Sometimes induction at least should be carried out in the lateral position.

The dangers of general anæsthesia emphasise the case for local or regional analgesia whenever possible. General anæsthetics are essential from time to time, as for intra-uterine manipulations such as internal version and manual removal of a retained placenta, but the occasions could perhaps be chosen more carefully. General anæsthesia is often adopted without question because it allows every conceivable procedure to be carried out, but in many cases another and safer method might have been equally effective. Local and regional blocks have difficulties and dangers of their own, but there are many impressive reports of series in which they have been successfully used. Perineal field block is probably the safest for mother and baby: properly carried out, it will permit low, possibly mid-cavity, forceps delivery, and it is particularly suitable for breech delivery. As for domiciliary operations, modern antenatal care has made a high proportion of them straightforward; but the same dangers can threaten. At the meeting at the Royal Society of Medicine last month, Dr. R. B. Parker gave statistics from Birmingham which showed that the risk of maternal anæsthetic death was greater in hospital

practice than in domiciliary obstetrics. The domiciliary anæsthetic is almost always chloroform, with or without ether. The dangers of chloroform are well known and its use is sharply condemned on all sides; but many still mourn the passing of chloroform from hospital practice, and miss the smooth induction and the flexibility it affords. At present there is nothing which quite replaces it for those who give most of the anæsthetics in hospital obstetrics.

It seems that there is much useful information to be obtained from a wide survey of anæsthetic mortality and morbidity in obstetrics, both domiciliary and institutional. This should take into account the circumstances of the operation, the equipment available (such as tipping bed and suction apparatus), and the experience and training of the anæsthetist.

XERORADIOGRAPHY

IN a new form of X-ray photography, xeroradiography, no wet chemicals are used to develop the latent photographic image. The process is a photo-electric one and was first described by Carlson in 1937. Although it has been in use in commercial photography for some time, medical applications are only now being investigated. The technique depends on the property of a group of substances, known as semi-conductors, to hold an electrical charge in the dark, but to allow it to leak away when exposed to light or X rays. Of these substances the most promising so far investigated is amorphous selenium. A xerographic plate consists of a metal base on which is deposited a layer of selenium 120–150 μ thick. It is protected from light and mechanical damage by a cover similar to an ordinary photographic cassette. Before use the plate is charged in a special chamber by a high-voltage D.C. source, which gives the selenium a positive electrostatic charge. The plate is exposed in the normal way and the image is "developed" by spraying a fine powder on the surface of the plate in another light-proof chamber. The powder is taken up by the surface of the plate according to the amount of charge remaining and so an image appears. It takes about 10 seconds to charge the plate and about 20 seconds to powder it. Radiographically speaking, these times are remarkably short, even compared with those possible by the rapid wet processing methods now available, and there is the added advantage that no dark-room is required. Indeed, the whole charging and powdering equipment can be built into a trolley 4 ft. by 2 ft. or less and tucked into any corner of the X-ray room or operating-theatre. Costs are problematical, but the charging and powdering machine may cost from £200 to £500 and the plates about £5 each; and since these can be re-used indefinitely, the method offers a cheerful prospect of reducing costs.

The quality of the image is a more debatable point. The xerograph is rather like an etching in black and white, and it is viewed by reflected light. To the unaccustomed eye at least, it is more difficult to interpret than the conventional radiograph. The image is of low contrast, and soft tissue and bones are easily distinguishable on the same plate. The powder tends to build up in lines along the margins of the more dense parts of the image, and this enhances the contrast and the clarity of detail. Fine wire grids as close as 1200 to the inch can be resolved, whereas, with normal film, detail deteriorates at 180 lines per inch.[1] At the present stage of development the speed of the xerograph is not all it might be, being about the same as that of non-screen film; exposures are therefore unacceptably long for the heavier parts of the body. Another disadvantage is that a permanent record can be made only by photographing the xerograph on miniature film or by copying it electrically; this would be a particular drawback when a series of radiographs has to be inspected regularly or when it is likely that one or more films will be needed for future reference. Further research into the possibility of using a translucent base, to allow inspection by transmitted light, and of reducing the exposure required may make the method more useful medically.

Much of the work on xeroradiography has been done in this country by W. D. Oliphant in Edinburgh, and trials of the equipment are well under way. From America it is depressing to learn that the method is being considered as a means of replacing stocks of ordinary film fogged by atomic explosions. But more cheerful news of the interesting medical possibilities should be coming shortly.

1. Roach, J. F., Hilleboe, M. D. *J. Amer. med. Ass.* 1955, **157**, 899.

SECOND-AID

THE treatment of an injury begins almost as soon as it is sustained. The patient himself—or a witness who renders assistance or tenders advice—is his first "doctor." From this haphazard beginning he passes through the hands of successively more experienced helpers until he undergoes definitive treatment. His progress may involve a parent, an older workmate, a resourceful bystander, a civilian or policeman trained in first-aid, "the chemist," a nurse, a doctor, a hospital, and perhaps ultimately a specialist in traumatic surgery or a team of specialists. The more serious his injury the more likely he is to follow this sequence to its end, but how far he travels along the line depends also partly on chance and partly on the organisation. Many of those who get no further than one of the early stages might have profited if they had been carried at least one stage further. There is still much avoidable disability because patients with trivial injuries are not brought to clinics and services, which are there to treat them, until some complication has set in. Of those sent to hospitals well fitted to deal with them, some have suffered by delay in the preliminary "filtering," some by well-meaning but unenlightened handling on the way, and some because no-one appreciated that a patient with a dangerous condition may not look dangerously ill.

One particular section of this line is receiving increasing attention, as is well illustrated by two publications from the committee on trauma of the American College of Surgeons.[1 2] One is the fifth edition of a monograph on the treatment of fractures; the other, a new companion to it, is a similar work on the early care of soft-tissue injuries. The growing realisation of the importance of this second type of injury is reflected in the size of the monograph on it, which is twice that of the other. Both combine simplicity, brevity, and absence of distracting controversy with remarkable comprehensiveness. Both may be accepted as a concise presentation of the most authoritative views in contemporary American teaching. Both emphasise the value—often the supreme value—of correct *early* treatment, which may lie in the hands of younger and comparatively inexperienced people. They are aimed at "interns and residents in the hospital who serve their periods in the emergency room" and at all doctors who have to do with the treatment of injuries; but there is sufficient indication of the later specialised treatment for readers to understand why initial decisions have a vital influence on the final result.

It is neither possible nor desirable for every minor injury to be submitted to highly specialised services. Nevertheless, much delay in recovery may be avoided if those responsible for early care are guided to select accurately the more serious injuries and if they are briefed on the best way to deal with these before they are sent on. Senior surgeons cannot sit all day in their casualty departments waiting for the next accident; but they can make clear their wishes on early treatment, and they can inform their juniors of the type of surgery likely to be required later in the day. House-surgeons, casualty-

1. An Outline of the Treatment of Fractures. By the Committee on Trauma, American College of Surgeons, 40, East Erie Street, Chicago, 11, Ill., U.S.A. 1954.
2. Early Care of Soft Tissue Injuries. By the Committee on Trauma, American College of Surgeons. 1954.

officers, and "interns" usually have a comparatively brief term of office. Many casualty departments and accident rooms have a periodicity in the standard of their service which corresponds with the length of the doctor's appointment. Continuity of policy among successive holders is difficult to maintain, and these publications could do much to maintain it.

ANTI-HISTAMINES AS HYPNOTICS

MANY anti-histamine drugs in common use cause drowsiness, and that is usually unwelcome; but Straus et al.,[1] in New York, have tried to decide whether this property can be turned to good account. In a controlled experiment they have shown that the anti-histamine, methapyrilene hydrochloride, in a dose of 50 mg. by mouth, is as effective a hypnotic as 100 mg. (gr. 1½) of phenobarbitone. This work confirms a general clinical impression, but anti-histamine drugs are unlikely to be widely accepted as alternative hypnotics to barbiturates.

The experiment is of interest because of the methods employed in evaluating methapyrilene's hypnotic powers. It was conducted on the "double-blind" principle, and methapyrilene was compared with a positive control (in this case phenobarbitone) and with a negative control (an inert capsule). The "cross-over" technique was used—that is, all patients received all the substances being tested, but different sequences were followed in the various patients. The choice of phenobarbitone as a positive control was perhaps unfortunate, for this drug is usually classed as a sedative rather than a hypnotic, and 200 mg. (gr. 3) of pentobarbitone would perhaps have been a better dose. The greatest difficulty in an experiment of this kind is the selection of suitable patients. Ideally (for unquestionable results), no-one should sleep well after the placebo and all should sleep well after the positive control. As the experiment was designed with an evaluation period of three weeks, it was necessary to select patients with chronic insomnia relatively uninfluenced by factors other than the change of medication. Obviously the ideal conditions will rarely be obtained in practice, and, in fact, although Straus et al. selected their 54 subjects with great care (only male patients were included), 30% showed an excellent response to the placebo. The number of variables might have been less if each drug had been given only once to each patient, and if a larger number of patients had been used.

The criteria of a night's sleep were the patients' own statements in a standard interview and the observations of a night-nurse who shone a flashlight on each patient regularly during the night. The nurse's impression of the patient's sleep was consistently better than that of the patient himself. Other methods of measuring sleep, notably electro-encephalography, were considered but all were rejected as inferior to the simpler tests employed. Each night's sleep was classified and scored, and the data so obtained were statistically analysed in considerable detail. The conclusion was that, as a hypnotic, methapyrilene was superior to the placebo and about equal to phenobarbitone. The refinement of the statistical methods seems scarcely suited to the analysis of data measured on an arbitrary scale, and in the presence of many uncontrolled and often unidentifiable variables. But Straus and his colleagues have given a very good example of a carefully designed experiment, and it would be a great advance if all new hypnotics were examined with equal care. On the other hand, some may think that the information obtained by an elaborate study like this still falls short of scientific proof; and that the judgment of an experienced clinician, based on the observation of relatively few patients (and perhaps of himself on the night train to Scotland), is still a very good measure of what a hypnotic is really worth.

1. Straus, B., Eisenberg, J., Gennis, J. *Ann. intern. Med.* 1955, **42**, 574.

ORTHOSTATIC PROTEINURIA

ORTHOSTATIC proteinuria is a condition in which the urine is normal while the patient is lying down, but contains protein when he is up and about. It is usually considered to be a temporary and harmless anomaly. King,[1] in a study of 4000 cases of proteinuria in the United States army, has put forward the view that it is often permanent and not completely benign. The proteinuria persisted for three years in 131 of 170 cases, and many of these gave a history of proteinuria for up to ten years previously. These observations agree with those of Thorp and Wakefield[2] who found that 43 of 64 patients still had proteinuria after six years. The incidence of anatomical abnormalities of the kidneys and ureters in cases of orthostatic proteinuria is unusually high. King found that 18 of 56 cases showed radiological abnormalities by intravenous pyelography, and Young et al.[3] have reported a similar proportion.

The amount of protein lost in the urine may occasionally be as great as in severe glomerulonephritis. Concentrations of protein as high as 4 g. per 100 ml. in single urine specimens have been reported,[4] and Wolman[5] states that the range of concentration in 24-hour specimens is 15–545 mg. per 100 ml., with a mean value of 74 mg. per 100 ml. The highest level corresponds to a protein loss of about 8 g. daily, equalling that found in many examples of the nephrotic syndrome. Electrophoresis showed that the proportion of globulin was unusually high.[1]

There is still controversy about the cause of the condition. Sonne[6] considered it was the result of compression of the left renal vein as it crossed the abdominal aorta; and Bull[7] thought that rotation of the liver during lordosis compressed the inferior vena cava and so increased caval venous pressure. King believes that further experimental evidence is necessary before either of these hypotheses can be accepted. King and Baldwin[8] have confirmed Bull's finding[7] that there is a profound fall in glomerular filtration-rate and renal plasma-flow in the erect lordotic posture, but they found no significant difference in filtration-rate or plasma-flow when cases of orthostatic proteinuria were compared with non-proteinuric controls.

The immediate prognosis in cases of orthostatic proteinuria is good, and it is certain that this anomaly does not indicate rapidly progressive renal disease. Insurance statistics suggest, however, that the mortality over many years is significantly greater than in control "good-life" cases. Daley[9] states that actuarial statistics published in 1938 showed a mortality in 52,000 cases of "intermittent" proteinuria of 128% of the expected level. Further experience[1] up to 1951 suggests that the mortality rises to 150% of the expected figure, and that the extra deaths are most commonly due to cardiovascular disease.

THE next session of the General Medical Council will open on Tuesday, May 24, at 2 P.M., when Sir DAVID CAMPBELL, the president, will deliver an address. The Medical Disciplinary Committee will meet on Thursday, May 26, at 10.30 A.M.

Prof. G. W. CORNER of Baltimore has been elected a foreign member of the Royal Society in recognition of his work on the endocrine control of gestation and especially on the function of the corpus luteum in mammals.

1. King, S. E. *Ann. intern. Med.* 1955, **42**, 296.
2. Thorp, E. G., Wakefield, E. G. *Ibid*, 1933, **6**, 1565.
3. Young, H. H., Haines, J. S., Prince, C. L. *Milit. Surg.* 1943, **92**, 353.
4. Hopper, J., Bolomey, A., Wennesland, R. *Ann. intern. Med.* 1954, **41**, 18.
5. Wolman, I. J. *Amer. J. med. Sci.* 1945, **210**, 86.
6. Sonne, C. *Z. klin. Med.* 1921, **90**, 1.
7. Bull, G. M. *Clin. Sci.* 1948, **7**, 77.
8. King, S. E., Baldwin, D. S. *Proc. Soc. exp. Biol., N.Y.* 1954, **86**, 634.
9. Daley, R. M. *Urol. cutan. Rev.* 1942, **46**, 13.

Special Articles

CANCER
THE PSYCHOLOGICAL DISEASE

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THE title of this article is not intended to suggest that cancer is a "psychosomatic" disease, but rather to point out that besides the physical disease of cancer there is a psychological condition of "cancer apprehension," which affects almost the whole population. This mental attitude is present in many members of the medical profession, although in their case it assumes a rather different form, and the fact that discussions on cancer education often generate more heat than arguments about politics or even religion, may in itself be additional proof of my thesis.

PREVALENCE

Is this apprehension of direct harm to the community? Clearly in its acute form of "cancerphobia" it causes great harm to some individuals, and each year a few suicides are recorded, where the unfortunate victim is found to be without trace of the disease. Mental worry, even if only intermittent, as is often the case in cancer apprehension, must also be harmful to the individual, and, if widespread, must surely be bad for the community. What evidence is there that cancer apprehension is widespread? There is no statistical evidence, but surveys in America are suggestive and a survey among 1200 Manchester women [1] showed that three-quarters considered it the most alarming of all diseases.

Every doctor has patients who visit him with vague symptoms; and if, at the end of an examination, the doctor says "I am glad to say that I can find nothing serious, no evidence of tumour or cancer," as often as not the patient will say "Thank God, that was what I was really worried about." Such cases clearly indicate this presence of cancer apprehension. Unfortunately some of these cancer-apprehensive patients are not recognised: they are labelled neurotics or neurasthenics, and they continue to live on the doctor's doorstep in the hope of being reassured.

Reluctance, in the dislike to mention the word cancer, is also evidence of apprehension. Obituary notices refer to a "long and painful illness bravely borne." (Heart-disease, with its greater mortality, is never shunned in this way.) Doctors, even if they are not anxious about themselves, are anxious that nobody should hear, or think, about cancer. Whether a patient should be told the truth must depend on circumstances. Often the relatives are told, but the patient is deceived—if he or she can be deceived which is doubtful. Later, if the relatives think they have cancer, the doctor finds it hard to convince them that there is no cancer. In the Manchester survey already mentioned 40% of the women thought that the patient should be told. Any attempt to keep the disease "hush-hush" must fail, because it is met with so frequently. Each year in this country about half a million are added to the number of people who have already come in direct contact with a patient.

An incident, illustrating the fatalistic and defeatist attitude of some doctors towards cancer, happened to me. When I entered hospital to be investigated for a possible gastric carcinoma, one of my colleagues said "Of course you know you have not got a carcinoma or you would never go into hospital." On leaving hospital after an exploratory laporatomy, which fortunately proved negative, another colleague said "Of course you were the only person who thought it might be carcinoma." Would these remarks have been made about any other disease?

Though there may be a difference in opinion as to how widespread is cancer apprehension, there is no doubt that it often delays diagnosis. There are no figures to show how many patients put off a visit to the doctor for fear that the condition may be cancer, but the answers given in the Manchester survey to the question why women are more frightened of getting cancer than any other disease, are probably also the reasons for delay in reporting symptoms to a doctor. Of these, the answers that it is "fatal," "incurable," "gets worse," "only know when it is too late," and "because of the pain and suffering" head the list.

There are figures, however, which show the time that elapses after a patient has noticed a symptom before he or she seeks advice. Stocks [2] reported that the median number of months interval between the earliest symptom and the start of treatment for cancer of the uterus was 5·7 months (taken from the figures supplied by twenty-six hospitals), for the breast 6 months, and for the rectum 5·6 months. Figures collected by the Yorkshire council of the British Empire Cancer Campaign show much the same delay.

TREATMENT

What can be done to lessen apprehension and thus obtain earlier diagnosis? Surely the answer can only be to educate the public by giving information about the accessible cancers, and by encouraging people to talk about cancer, and thus to bring their fear to the surface and to face it. Those who oppose this plan do so chiefly on the grounds that attempts to educate the public will increase cancer apprehension and fear. If true this would certainly defeat the object of obtaining earlier diagnosis. Psychiatrists could help us to settle this question, but unfortunately, though interested in the treatment of true "cancerphobia" patients, they have little time to study the problem.

The Yorkshire Council of the B.E.C.C., with the help of some of the local health authorities in the area, have lately given 220 lectures to the public on cancer education. At the end of most of these a printed slip is passed to each member of the audience, asking whether the lecture has increased their worry and such lectures should not be given, or whether it has diminished their worry and more lectures should be given. The results from 5740 votes shows 99·1% in favour, 0·2% against, while 0·7% put a question-mark.

The other argument used against cancer education is that even if patients are persuaded to visit their doctor when a symptom is noticed, the number of cancers treated in the early stage will not be greatly increased because of the large number of growths that disseminate before giving rise to symptoms. It is very doubtful whether this is true of the accessible cancers, which are the only ones that cancer education can hope to benefit.

Figures quoted in support of this are usually based on the results of treatment within six months of noticing symptoms and after six months. This is, in fact, a comparison between two different types of growth. The first set of figures includes all the rapidly-growing tumours as well as the slow-growing well-differentiated tumours, whereas the second set includes only the well-differentiated, slow-growing ones. The figures needed are those for 0–1 month, 1–2 months, 2–3 months, &c., for the accessible cancers. In the Manchester survey, 76% agreed that there should be freer public discussion of the symptoms.

If the psychiatrists could confirm the psychological benefit of cancer education, it would be a great help to those of us who are trying to obtain earlier diagnosis.

1. Paterson, R., Aitken-Swan, J. *Lancet*, 1954, ii, 857.

2. Stocks, P. Studies on Medical and Population Subjects, No. 3. H.M. Stationery Office. 1950.

WORK OF A GERIATRIC UNIT
A SURVEY OF 13,500 PATIENTS

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I HAVE recently completed a survey of all inpatients treated in the 18 medical geriatric wards of this hospital, from the beginning of 1950 to the end of June, 1954. Of these 13,500 patients, 11,000 were over sixty years of age, and some of the findings seem likely to interest others concerned with planning hospital care for the elderly.

The Background

Newsham, like many of the country's larger hospitals, had a humble origin as a 19th-century poor-law institution. As time went on, buildings designed as dormitories for the able-bodied gradually came to be used as wards for the growing number of infirm inmates. The occupants of these wards were mostly old and bedfast. Some were merely frail and homeless, some were disabled by chronic disease, some were acutely ill. For several decades there were few facilities for medical investigation, treatment, or rehabilitation; but a high standard of nursing care, provided by a hard-working though largely untrained staff, tended to conceal the defects of the system. These defects were aggravated and became more conspicuous during the second world war, when a depleted staff had to meet the additional demands of the Emergency Medical Service. Its new rôle as an emergency hospital led to the appointment of its first two resident medical officers, but the war precluded any large-scale improvement.

In 1946 there began a phase of development which has continued ever since, with a minimum of interruption due to the change of management in 1948. Staff was augmented; equipment was provided; and, despite financial restrictions and material shortages, some modest but useful structural alterations have been achieved. The original programme for the modernisation of the hospital's 34 wards is now nearly complete, and ancillary services have been steadily expanded to meet the increasing demand for investigation and rehabilitation of a medical staff which now numbers 36. At the beginning of the period of this survey there were already adequate facilities for radiology, pathology, physiotherapy, and occupational therapy; and an almoner's department dealt with social problems. By the end, all these departments had been further improved and many new ventures had been started—e.g., there was a chiropodist, a dispensing optician, and a cardiographer; the hospital had its first operating-theatre; and a small follow-up clinic had been set going.

The number of beds in medical geriatric wards inevitably fluctuated during four and a half years, and the over-all result was a slight reduction from about 740 in 1950 to 707 in 1954. For instance, 16 beds were lost when part of a male ward was converted to enlarge the X-ray department: others were sacrificed to much-needed sanitary improvements in several wards. In my review I have excluded 2 wards for senile dements and 1 mixed psychiatric ward. Also I have ignored inter-departmental transfers; but this two-way traffic is too small to influence the main findings.

Most of the patients in the survey were admitted at the request of their own general practitioners. During the greater part of each year there is a waiting-list, and patients are admitted in their turn unless their doctors ask for priority. Apart from an occasional need to assess the relative urgency of claims for priority, there was no selection or screening of admissions by the hospital medical staff. About 9–10% of each year's admissions were transfers from hostels and other hospitals.

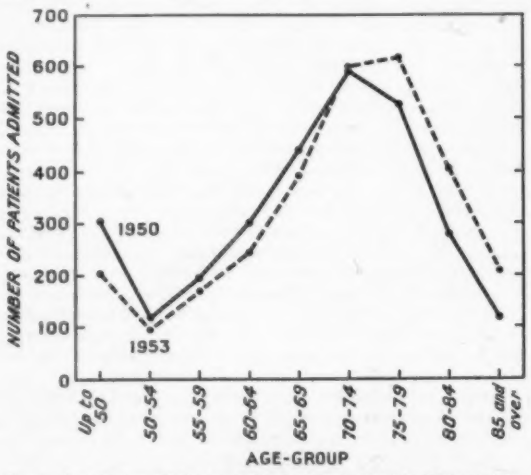

Fig. 1—Comparison of the ages of patients admitted in 1950 and 1953.

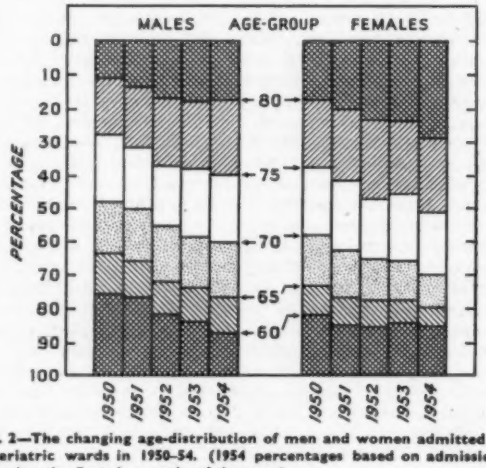

Fig. 2—The changing age-distribution of men and women admitted to geriatric wards in 1950–54. (1954 percentages based on admissions during the first six months of the year.)

The 18 wards included in the survey form a composite geriatric unit, which undertakes not only investigation, treatment, and rehabilitation, but also the long-term care of patients with chronic disease who cannot be adequately nursed outside hospital. The latter are not segregated in a separate annexe. In general, a ward, or group of wards, retains its own long-stay patients, but tends to concentrate them as a matter of convenience. This system is largely dictated by local conditions and offers many advantages. Both medical and nursing staff share the variety and interest of different types of work, and most elderly patients like to remain with the same staff throughout their stay. Moreover, the atmosphere of an active ward helps to sustain an expectation of ultimate discharge in the minds both of patients and their relatives.

Analysis of Results

Age of Patients

Patients over seventy years age of increased from 1516 (52·8% of all admissions) in 1950 to 1822 (62·4%) in 1953, and represented 65·2% of all patients admitted in the first six months of 1954. Higher in the age-scale, the proportion of admissions over eighty years of age increased from 13·9% in 1950 to 23·2% in 1953 (fig. 1).

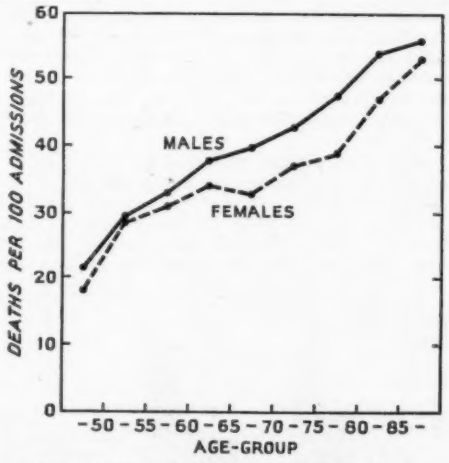

Fig. 3—Mortality of whole series at different ages.

Like other geriatric units (Thomson 1949, Morton 1952, Amulree et al. 1952, Andrews and Wilson 1953) we found that men tend to be admitted at an earlier age than women (fig. 2). In both sexes the age on admission rose in successive years, but women showed a greater increase than men. The increasing proportion of men in the older age-groups depended partly on a reduction in the proportion under sixty years of age, while the numbers of women under sixty varied very little.

Mortality

As in the general population, mortality increased with age after fifty years, and in every age-group women had a lower mortality than men (fig. 3). Death-rates per 100 admissions varied from 18·0 (women under fifty) to 55·4 (men aged eighty-five and over); the death-rate did not pass the 50% level until age eighty for men and eighty-five for women.

Despite the increasing age of patients admitted, mortality-rates fell during 1950–53. Annual rates per 100 admissions (table I) are convenient for comparison, though not all the patients dying in a given year were

TABLE I—MORTALITY IN GERIATRIC WARDS, 1950–53

Year	Patients of all ages			Patients aged 60 and over		
	Admissions	Deaths	Death-rate	Admissions	Deaths	Death-rate
1950	2877	1121	39·0	2256	963	42·6
1951	3216	1301	40·5	2587	1136	43·9
1952	3017	1166	38·6	2522	1034	41·0
1953	2922	1109	37·9	2456	995	40·5

admitted in that year. The mortality of both sexes combined shows a fall in each year after 1950, with the exception of 1951. (This interruption of the downward trend seems to have been caused by a severe influenza epidemic in January and February of that year. Mortality in this epidemic was particularly high in the elderly, and the hospital is situated in an area which was badly affected.) But table II shows that the combined mortality rates conceal an important sex-difference. The over-all decline in mortality depends entirely on a fall in female rates (from 38·2% in 1950 to 33·4% in 1953) which offset a smaller rise in the male rates (from 39·5% in 1950 to 42·8% in 1953). The general increase in male mortality depends almost entirely on younger patients, however, for in the death-rates of men aged sixty and over the rise is less definite. An unexpected finding was that both sexes had a falling mortality in the seventy-five and over age-group. For this group the death-rates per 100 admissions were:

	1950	*1951*	*1952*	*1953*
Men ..	50·5	48·6	50·3	50·1
Women ..	48·5	47·0	41·5	39·5

Turnover

The highest annual total of admissions was 3216 in the year 1951—an increase of 339 over 1950. Rather more than half this increase in turnover can reasonably be attributed to the influenza epidemic, for in 1951 there were 173 more discharges as well as 180 more deaths than in 1950. Admissions then declined to 3017 in 1952, and again to 2922 in 1953. Even in 1953, however, admissions and discharges remained higher than in 1950, and the downward trend appears to have been checked in 1954, for 1523 patients were admitted in the first six months of that year.

The decline in turnover between 1951 and 1953—a difference of 294 admissions—certainly cannot be explained by the small reduction in beds already mentioned; for a loss of 24 beds would account, at 1953 rates of turnover, for 138 admissions at most. But this type of calculation over-simplifies a controversial issue. On the one hand, some of the improvements obtained in exchange for lost beds might be expected indirectly to increase turnover. On the other hand, any reduction in beds will tend to reduce admissions: and improvements, while they may at once increase comfort or convenience, will not increase turnover until this deficit is made good.

TABLE II—COMPARATIVE MORTALITY OF MEN AND WOMEN PATIENTS

Sex	Year	Patients of all ages			Patients aged 60 and over		
		Admissions	Deaths	Death-rate	Admissions	Deaths	Death-rate
Men	1950	1588	628	39·5	1200	534	44·5
	1951	1716	696	40·6	1316	596	45·3
	1952	1516	617	40·7	1238	538	43·5
	1953	1418	607	42·8	1187	536	45·2
Women	1950	1289	493	38·2	1056	429	40·6
	1951	1500	605	40·3	1271	540	42·5
	1952	1501	549	36·6	1284	496	38·6
	1953	1504	502	33·4	1269	459	36·2

Table III suggests that the decline in admissions during these years depends mainly on falling mortality. The decrease in deaths was almost twice as great as that in discharges: moreover, if each is expressed as a rate per 100 admissions, the death-rate fell by 2·6% while the discharge-rate increased by 2·3%.

These findings illustrate an unpalatable truth—and a growing problem. Not every patient whose life is saved in a geriatric unit can be discharged, and falling mortality is likely to reduce the number of patients who can be served by each geriatric bed.

The numbers of discharges quoted above include patients transferred to hostels and other hospitals. In 1951, 337 were transferred, but in 1953 only 266; and their corresponding rate per 100 admissions fell from 10·5 to 9·1%. In the same period, patients discharged to their own homes showed a smaller reduction in actual

TABLE III—TURNOVER

Year	Admissions	Discharges		Deaths	
		Numbers	Rate	Numbers	Rate
1951	3216	1925	59·9	1301	40·5
1952	3017	1852	61·4	1166	38·6
1953	2922	1817	62·2	1109	37·9
Difference 1951–53	−294	−108	+2·3	−192	−2·6

TABLE IV—TRANSFERS AND DISCHARGES

—	1951	1953	Difference
Transferred—			
to other hospitals..	81	49	32
to hostels	256	217	39
Total transfers ..	337 (10·5%)	266 (9·1%)	71 (−1·4%)
Discharged to own homes	1588 (49·4%)	1551 (53·0%)	37 (+3·6%)

numbers and their rate per 100 admissions rose from 49·4 to 53·0% (table IV).

The fall in the transfers to other hospitals presumably reflects the development of Newsham and its growing independence of outside facilities. The reason for the fall in transfers to hostels is more complex. The number of places in local hostels for the elderly has increased in recent years, yet competition for vacancies seems to increase. The turnover in the geriatric wards could probably be slightly higher if there were more hostel vacancies. But the main problem arises from patients who, even after all possible active treatment, cannot be discharged to their own homes and are too frail to be transferred to most hostels of existing types. It is an encouraging sign for the future that locally, at least, the need for a more sheltered type of hostel is recognised, and the hospital is collaborating with both the Liverpool public-health department and the Liverpool Personal Service Society to augment "half-way" accommodation for "frail ambulants."

Length of Stay

The study of length of stay in geriatric wards is complicated by a few patients who remain for long

TABLE V—PATIENTS ADMITTED 1950–52 WITH LENGTH OF STAY EXCEEDING TWELVE MONTHS

Age	Men	Women	Total
Under 60	15 (1·4%)	23 (3·4%)	38 (2·2%)
60–69	31 (2·4%)	36 (3·8%)	67 (3·0%)
70–79	52 (2·9%)	91 (5·1%)	143 (4·0%)
80 and over	22 (3·3%)	74 (5·4%)	96 (6·2%)
Total all ages	120 (2·5%)	224 (5·2%)	344 (3·8%)
Total 60 and over	105 (2·8%)	201 (5·6%)	306 (4·2%)

periods and whose final length of stay was still unknown when this survey was made. For example, 56 patients admitted in 1949 or earlier, and a further 23 admitted in 1950, still occupied geriatric beds at the end of 1953. I have therefore divided all admissions into two groups —long-term patients who stayed over twelve months, and those who left hospital within this arbitrary limit of twelve months. According to this classification, 2·5% of the men, 5·2% of the women, and 3·8% of both sexes admitted in 1950–52 were long-term patients. The proportion of each sex increased with age, and in every age-group women show a higher proportion than men (table V).

Fig. 4 shows the proportion of long-term patients of different ages in 1950, 1951, and 1952. Though the proportion to total admissions remains about the same, there is a gratifying fall in the numbers and proportion of patients of seventy-five and over staying longer than twelve months:

Admitted in 1950 .. .. 65 patients (7·0%)
" " 1951 .. .. 60 " (5·1%)
" " 1952 .. .. 50 " (4·0%)

Choosing 1951 as an example, and excluding all long-term patients admitted in that year (4·1% of total), I have shown in fig. 5 the mean duration of stay of all other patients—i.e., those who left the unit within twelve months. In this group, again, there is a remarkably close correlation between age and length of stay. Both sexes show a steadily increasing length of stay in successive age-groups, but in every group the average stay of women was longer than that of men. These patients also provide information about the effect on turnover of changes in mortality: in each sex the average stay before death was much shorter than that before discharge (table VI).

A few of the patients admitted in each year of this survey are still in hospital, and it is not yet known to what extent they will influence the average stay of their group. As an example of the serious distortion of average values which can be caused by a small minority of long-stay patients, table VII shows the average stay of

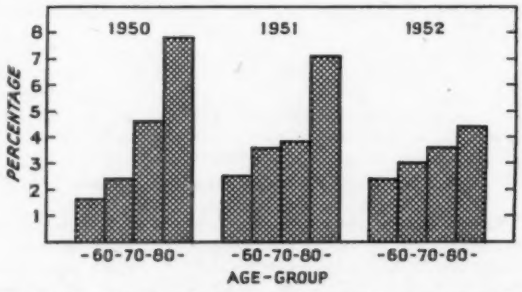

Fig. 4—Proportion of each year's admissions with a stay exceeding twelve months, 1950–52.

long-term and other patients who left the unit in 1951. Of the 3226 patients who died or were discharged, 3105 had an individual stay of less than twelve months and the average stay was 47 days, while 121 long-term patients had stayed for an average of 970 days, or more than two and a half years. A minority of 3·8% long-term patients raised the average stay of the 96·2% majority from 47 days to 81 days, and accounted for nearly 45% of the quarter-million patient-days spent in hospital by the whole group.

Use of Beds

An important group of long-term patients fails to qualify for inclusion in the usual statistics of admissions, discharges, and deaths in any one year. In 1950, for example, 187 beds were occupied throughout the year by patients who were admitted before Jan. 1 and still remained on Dec. 31. The number of beds occupied throughout a whole year fell to 176 in 1951, but rose to

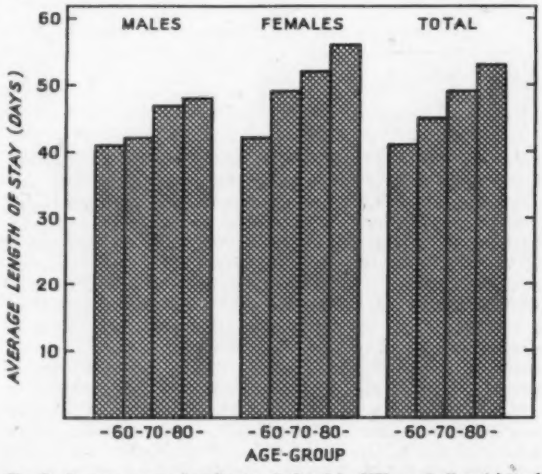

Fig. 5—Average stay of patients admitted in 1951, excluding 4·1% of total who remained longer than twelve months.

TABLE VI—LENGTH OF STAY BEFORE DISCHARGE OR DEATH

—	Average stay (days)					
	All ages			Aged 60 and over		
	Males	Females	Total	Males	Females	Total
Before discharge ..	52	54	53	56	57	56
,, death ..	33	46	39	32	46	39
All patients ..	44	51	47	45	52	48

196 in 1952, and to 201 in 1953. Women patients caused almost the whole of the increase.

It is true that most elderly patients occupy beds little longer than younger patients (Graham 1951, Amulree et al. 1952). Almost half (49%) of the patients leaving the unit in 1951 stayed less than one month, and 85% had an average stay of less than one month. Yet even a small proportion of long-stay patients in the intake of successive years can cause serious cumulative obstruction of beds. Although only 3·8% of all patients admitted in 1950–52 stayed longer than twelve months, more than 28% of the unit's 707 beds were occupied throughout 1953 by long-term patients admitted before Jan. 1, 1953. Of the 201 patients who occupied beds throughout 1953, 141 were women (who occupied 35% of 399 beds in female wards) and only 60 were men (who occupied 19%

TABLE VII—AVERAGE LENGTH OF STAY BY A SMALL MINORITY OF LONG-TERM PATIENTS. BASED ON PATIENTS LEAVING GERIATRIC WARDS IN 1951

Classification by age and length of stay		Number of patients	% of total	Total patient-days	Average stay (days)
All ages	Under one year	3105	96·2	145,640	46·9
	Over one year	121	3·8	117,326	969·6
	Total	3226	100·0	262,966	81·5
Aged 60 and over	Under one year	2474	95·8	118,120	47·8
	Over one year	110	4·2	99,476	904·3
	Total	2584	100·0	217,596	84·2

of the unit's 308 male beds). Table VIII shows that 145 (both sexes) had been admitted in the years 1950–52, and 56 in earlier years before the survey began. 14 had completed ten years stay by the end of 1953, of whom 9 were under sixty years of age at the time of admission —a reminder that younger victims of chronic disease also need hospital beds for long periods.

About a third of all long-term patients leaving the unit between Jan. 1, 1951 and Dec. 31, 1953, were discharged or transferred :

	Discharged	*Died*	*Total*
1951 ..	41 ..	80 ..	121
1952 ..	37 ..	73 ..	110
1953 ..	31 ..	68 ..	99
Total 1951–53 ..	109 ..	221 ..	330

These proportions of discharges and deaths give a somewhat gloomy, but far from hopeless picture of prognosis in long-term patients.

The unequal sex-distribution of the long-term patients (table VIII) explains most of the apparent difference in

TABLE VIII—LONG-TERM PATIENTS REMAINING ON DEC. 31, 1953

Year of admission	Males	Females	Total
1952	22	49	71
1951	13	38	51
1950	6	17	23
1949	6	7	13
1948	5	6	11
1947	3	9	12
1946	—	4	4
1945	—	1	1
1944	—	1	1
Before 1944	5	9	14
Total	60	141	201

the turnover of male and female beds in this series (table IX).

Demand for Beds

The demand for the unit's beds can be assessed from waiting-lists, which have been counted weekly since the beginning of 1951 (table X).

The long waiting-lists created by the influenza epidemic in the first quarter of 1951 were virtually cleared by the autumn of that year. Thereafter, the total numbers waiting in any one season show a steady increase. Once again, however, this increase is not evenly distributed between the sexes. Men show a slight increase, but their rising trend appears to have been checked in the first part of 1954. Women show a greater and more con-

TABLE IX—ADMISSIONS PER BED IN 1953

—	Males	Females	Total
Number of admissions	1418	1504	2922
Number of beds	308	399	707
Admissions per bed	4·60	3·77	4·13
Beds blocked throughout the year ..	60	141	201
Beds available for admissions ..	248	258	506
Admissions per available bed	5·71	5·83	5·77

sistent increase from October, 1951, to June, 1954. In 1951 male and female waiting-lists were about equal, but in 1953 the female list was almost twice as large as the male list.

The major deficiency at present is clearly in female beds. 90 have been made available in a newly opened hospital, administered by the same management committee ; and it is planned to increase this accommodation to over 250 beds within the next twelve months.

Discussion

Many social changes contribute to the growing demand for institutional care of the elderly, but the basic cause is the changing age-distribution of the population. The Royal Commission on Population (1949), taking the year 1947 as a datum-line and assuming a falling mortality, estimated that people over sixty-five years of age would show an increase of 26% by 1963 and of 64% by 1977. The latest statistics show that in 1947–52 these age-groups did, in fact, increase by 7·7%—an annual rate of 1·5%—

TABLE X—AVERAGE WAITING-LISTS, JANUARY, 1951, TO JUNE, 1954. BASED ON WEEKLY COUNTS

Period of year	Males				Females				Total			
	1951	1952	1953	1954	1951	1952	1953	1954	1951	1952	1953	1954
1st quarter	181	66	61	52	135	44	79	111	317	110	140	162
2nd ,,	21	18	34	34	47	32	64	91	69	49	98	125
3rd ,,	6	1	24		22	8	29		29	9	53	
4th ,,	3	19	15		9	26	66		12	44	81	
Whole year	53	26	33		54	27	60		106	53	93	

which is in close agreement with the estimate. Of even greater importance to the hospital services is the redistribution within the age-structure of these older age-groups. Between 1947 and 1952 the number of people aged seventy-five and over increased by 14%—almost double the rate of those aged sixty-five and over (Annual Abstract of Statistics 1952 and 1953).

In the general population, as in the present series, increasing age is more obvious among women than among men. In these five years, women aged sixty-five and over increased by 10%, men of the same age by only 4%. The sex-difference in the age-groups over seventy-five is less conspicuous, but women show a greater rate of increase than males. Although our local population ("Merseyside Connurbation") has a lower percentage of elderly people than the national population,

there are 173 women to every 100 men of over seventy-five on Merseyside, compared with 162 women to every 100 men in England and Wales (Registrar-General 1952).

The high rate of increase in the age-groups over seventy-five affects the hospital services in two ways. First, because among the over-seventies there is a sharp increase in frailty, dependence on others, and demand for institutional care (Sheldon 1950, 1954). For example, the 1951 census returns (1% sample) showed that 48% of men remained in whole-time employment after the age of sixty-five, but only 20% after the age of seventy. Similarly, the Wolverhampton survey (Sheldon 1948) showed that the proportion of women undertaking the sole domestic care of their household remained fairly constant at about 50% between the ages of sixty and seventy-four, but declined to 40% after seventy-five and to 18% after eighty years. As long as morbidity continues at present levels, any increase in these older age-groups must cause a disproportionate rise in the demand for hospital beds. Lowe and McKeown (1950) calculated age-specific rates for patients in hospitals for the chronic sick per 1000 of the Birmingham population: their rates show a remarkably sharp increase in the older groups:

Age	*Rate per 1000*
55–64	1·53
65–74	6·38
75–84	22·21
85 +	58·93

This survey also suggests that an increase in the age of patients admitted to geriatric beds will tend to reduce turnover—both by increasing the proportion of long-stay patients and by lengthening the average stay of those discharged.

The Wolverhampton survey drew attention to the fact that the lower mortality of old women is accompanied by a morbidity higher than that of old men, and there has since been ample evidence that the proportion of hospital accommodation required for older women is far greater than can be explained by their greater numbers. Greenwood (1949), Exton-Smith (1952), Morton (1952), and Andrews and Wilson (1953) all quote examples of the disproportionate demand for female beds; and in the Birmingham survey women had a higher age-specific rate than men at all ages after seventy-five.

Estimates of future hospital scales based on the total numbers of both sexes, either in the whole population or in the combined age-groups over sixty or sixty-five years, can have only a short-term reliability. Long-term planning should take account of the changing age-structure and sex-distribution of the older population.

The difficulties of long-term planning have been discussed in a P.E.P. study (1954), which reviews basic assumptions about trends in birth-rates and mortality, and suggests that previous estimates of the economic burden of old age may have been exaggerated. Fortunately changes in the birth-rate cannot directly increase the burden on the geriatrician for sixty years or more—though the size of the working population will influence the amount of the national income available for welfare services, including hospitals. The future demand on the hospital services will depend both on the numbers of old people alive, and on the incidence of disease among them. It is a melancholy thought that many of the problems of old age are a by-product of unbalanced medical progress. We can prevent or cure many of the diseases which used to kill: we cannot yet control many of the more insidious diseases which disable those who survive into an extended old age. The control of arterial degeneration would probably do more than any other scientific advance to reduce the social and economic problems as well as the suffering of old age. Extra longevity without lower morbidity is a doubtful blessing for most of us. Old age must be made healthier and more useful if it is to be anything but an increasing burden, both to the individual and to the community.

It is a pleasure to acknowledge the willing assistance of many members of the hospital staff. I am especially indebted to Miss C. Ledsham and others who helped in the tedious work of extracting the basic figures for this survey.

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SALARIES IN THE PUBLIC-HEALTH SERVICE

UNDER an Industrial Court award which operates as from Jan. 1, 1955, medical officers of health, senior medical officers, and medical officers in departments (assistant medical officers) are to receive increases in salary ranging from £175 to £200. The new salary-scales are as follows:

Medical officers of health

Population Group	*Commencing salary*	*Increments*
Not exceeding 75,000	£1625–£1830	4 × £52 10s.
100,000	£1730–£2040	5 × £51 10s.
150,000	£1940–£2250	5 × £51 10s.
250,000	£2150–£2450	2 × £100 1 × £50
400,000	£2400–£2700	2 × £100 1 × £50
600,000	£2500–£2900	3 × £100
Over 600,000	At discretion	At discretion

Senior medical officers
£1415 × 50–£1765 × 65–£1830.

Medical officers in departments (assistant medical officers)
£975 × 50–£1375.

The court found against a proposal to introduce in Scotland a salary-scale for a medical officer of health with a population group not exceeding 60,000.

WHOLE-TIME AND PART-TIME CONSULTANTS

THE Joint Consultants Committees have had recent discussions with the Ministry of Health and the Department of Health for Scotland about whole-time and maximum part-time service for consultants in the National Health Service, and the following is an agreed statement of the position.

It is recognised that some consultants, while prepared to devote substantially the whole of their time to hospital work and to give it priority on all occasions, would prefer a maximum part-time to a whole-time contract. Ever since 1948 it has been the Ministry's view that, subject always to the needs of the hospital service, employing boards should in this matter take into account the circumstances and preferences of the consultants concerned. While there has been no previous statement on this point as regards Scotland, the practice in that country has been similar.

Where a new appointment is being made this means that, except where the board decides that the needs of the hospital service (considered in conjunction with those of the local health services where the consultant is to undertake duties on behalf of a local authority) demand a whole-time appointment, the competition should be thrown open to all applicants who are prepared to give substantially the whole of their time to the post, whether they prefer a whole-time or a maximum part-time contract. In such a case the successful candidate should not

be asked to state his preference until after he has been selected for appointment.

Similarly, if a consultant who is already employed in a whole-time post wishes to transfer to a maximum part-time contract, or vice versa, the board should, before reaching a decision, take his circumstances and preferences into account, again subject to the overriding needs of the hospital service.

This statement does not, of course, deal with the many cases where the services of a consultant are needed in the aggregate for only a limited volume of work, and where therefore a part-time appointment would in all cases be appropriate.

Public Health

Vaccination in London

AT a meeting of the London County Council on April 26 it was stated that the percentage (based on live births) of London children under 1 year vaccinated against smallpox shows a steady improvement since 1949. The figures are as follows:

1949 ..	25%	1951 ..	38%	1953 ..	48%
1950 ..	32%	1952 ..	45%	1954 ..	49%

There is continual propaganda on the part of the council's health visitors and clinic doctors to persuade mothers to have their young children vaccinated. General practitioners are encouraged to take their part in vaccination and are paid a fee of 5*s*. for each notification sent to the council. Opportunity is also taken to encourage vaccination by the distribution of literature and display of appropriate material in council establishments.

Notification of Tuberculosis

A recent Ministry of Health memorandum [1] explains which medical officer of health should be notified when a person is diagnosed in hospital as suffering from tuberculosis. Notifications should usually be sent to the medical officer of health of the district in which the patient normally lives; but where, in the case of long-stay patients, the hospital itself can reasonably be regarded as the patient's place of residence, the notification should be sent to the medical officer of health of the district in which the hospital is situated.

Swedish Poliomyelitis Vaccine

As we reported a fortnight ago,[2] plans are going ahead in Sweden for the use of a poliomyelitis vaccine made by growing virus on human tissue. Further details have been given in a report by Prof. Gunnar Olin, of the Swedish State Bacteriological Laboratory. The virus has been grown on aborted human fœtal tissue, and then inactivated with formalin (1 in 2000, compared with the 1 in 4000 formalin recommended by Salk). The inactivation is performed at 25°C (the American workers prefer 37°C). The antibody response is said to be good. Enough vaccine has been prepared to immunise 120,000 children, but further supplies may be limited by the shortage of suitable tissue for culture. American vaccine may be imported for the time being.

Education of Physically Handicapped

The Ministry of Education[3] has found that on Oct. 1, 1954, 1052 children were awaiting places in special schools. Their disabilities were as follows: cerebral palsy, 485; poliomyelitis, 100; heart defects, 78; muscular dystrophy, 73; spina bifida, 68; hydrocephalus, 42; deformities, 40; hæmophilia, 20; fragilitas ossium, 20; tuberculosis, 19; Perthe's disease, 12; muscular atrophy, 9; rheumatoid arthritis, 3; others, 83.

Of the 1052 children, 202 were awaiting places in day-schools and 850 in boarding-schools. The existing educational arrangements for these children were as follows: 371 were receiving home tuition; 250 were in ordinary schools; and 106 were receiving some other type of special educational treatment (mainly in hospitals). Of the 325 unprovided for, some were not receiving home tuition because of difficulty in finding teachers or of unsuitable home conditions.

There appeared to be enough places in day special schools. There is still a shortage of places in boarding-schools; but additional places expected to come into use within the next two or three years should suffice for all children whose parents are likely to consent to their attending such schools.

1. HM(55)35.
2. *Lancet*, April 23, 1955, p. 857.
3. Ministry of Education: administrative memorandum, no. 503; April 28, 1955.

First Quarter in England and Wales

The Registrar-General, in his provisional figures [1] for England and Wales in the first quarter of 1955, records a birth-rate of 15·5 per 1000 population, compared with 15·9 per 1000 in the first quarter of 1954. The death-rate was 15·4 per 1000 population, as against 14·0 per 1000 in the first quarter of 1954. The infant-mortality rate was a new low record for a March quarter—29·0 per 1000 related live births. It was 31·0 per 1000 (the previous record) in the first quarter of 1954. The stillbirth-rate was 23·1 per 1000 live and still births compared with 23·7 in the corresponding quarter of 1954.

1. Registrar-General's weekly return no. 15, 1955. H.M. Stationery Office. Pp. 20. 1*s*.

Parliament

Disseminated Sclerosis and War Pensions

IN the House of Commons on April 26 Mr. ARTHUR MOYLE asked the Minister of Pensions and National Insurance to examine the rules and the present terms of the Royal Warrant to see whether ex-Servicemen with disseminated sclerosis might not be assessed at the 100% disability rate.—Brigadier J. G. SMYTH, joint parliamentary secretary to the Ministry, pointed out that in the first world war two-thirds of the casualties were wounds. In the second world war the causes of two-thirds of the pensionable cases were diseases. But to earn a war pension these diseases must be causally connected with service. There was no evidence that disseminated sclerosis was in any way a military disease. The Ministry tried, however, to stretch the regulations as far as they could, and where a man had been subjected to a sudden shock, and within a short period showed signs of disseminated sclerosis, they said that perhaps the shock, although they knew it had nothing to do with the disease, had accelerated its progress and pensions were granted for aggravation. Accordingly after the late war pensions for aggravation of disseminated sclerosis were awarded in 1538 cases and there had been 1117 rejections.

QUESTION TIME

Ban on Heroin Imports

In the House of Lords, replying to a question Lord MANCROFT said that except for small quantities for purely scientific purposes Her Majesty's Government had decided not to permit the manufacture and export of heroin after Dec. 31, 1955. As adequate supplies had hitherto been manufactured in this country imports of heroin had not been authorised for many years: it was intended to maintain the prohibition on importation. The Government had taken this decision in order to give effect to a resolution adopted by the Economic and Social Council of the United Nations at its 18th session, urging all governments to prohibit the manufacture, export, and import of this drug, except for scientific purposes. Before the decision was reached the advice of the appropriate statutory advisory bodies was taken.

Viscount ELIBANK: Are the Government aware that Dr. Arthur Douthwaite, senior physician at Guy's Hospital, has stated in the *British Medical Journal* that the banning of this pain-killing drug, heroin, is an astonishing move which will inflict much hardship upon a multitude of patients? Is the noble Lord aware that one of the best-known physicians in Edinburgh, Dr. A. B. Flett, has written to me saying it is iniquitous that this most useful, and often, in certain cases, really necessary drug, should be banned?—Lord MANCROFT: The Government are aware of these opinions. On the other hand, I understand that adequate supplies of perfectly good substitutes for this drug are now available. The purpose of the action is, of course, to facilitate the world-wide banning of traffic in this extremely dangerous drug.

I do not think that the Government can do more than follow the technical advice and guidance given by the Central Health Services Council, the Standing Medical Advisory Committee, and the appropriate bodies in Scotland and Northern Ireland.

Poliomyelitis Vaccine

Replying to questions, Mr. IAIN MACLEOD, the Minister of Health, said that a small field trial with the Salk poliomyelitis vaccine was being carried out by the Medical Research Council. All vaccine used in this trial, whether imported or manufactured here, would first have been the subject of rigorous tests by the council. Plans for large-scale immunisation were, of course, dependent on the Minister of Health being satisfied, so far as was humanly possible, as a result of these tests and trials that the vaccine to be used was both efficient and free from danger.

Mr. ERIC FLETCHER: Would the Minister say whether any supplies of Salk vaccine from the Cutter Laboratories have been received in this country?—Mr. MACLEOD: No Cutter vaccine has been received in this country.

Mr. MONT FOLLICK: Are the vaccines which are being made by the Glaxo Laboratories of their own special prescription, or according to a prescription imported from America?—Mr. MACLEOD: I understand that what they are making is, in fact, the Salk vaccine. The difficulties in this case have arisen, I understand, from a batch made by the Cutter Laboratories. As we have none from those batches in this country, there should not be difficulty in that particular direction.

Salaries of Hospital Pharmacists

Replying to questions Mr. MACLEOD said that a general agreement on increased salaries for hospital pharmacists was reached by the appropriate Whitley Council on April 20. Details were now being worked out.

General Practitioners in the N.H.S.

Replying to questions, Miss PATRICIA HORNSBY-SMITH, parliamentary secretary to the Ministry of Health, said that on July 1, 1954, 19,300 general practitioners were practising in the National Health Service. Altogether 837 doctors practised single-handed and 614 partnerships employed assistants, other than trainees. The Minister of Health was not prepared to limit the increased number on a list when an assistant was employed to a maximum of 1500. The relationship of principals and their assistants could not readily be regulated by statute.

Mr. SOMERVILLE HASTINGS: Does not the Minister realise that many doctors find great difficulty in getting the necessary capital to start in practice and are therefore liable to be exploited by doctors who employ them as assistants?—Miss HORNSBY-SMITH: The matter is being considered by the British Medical Association and the Medical Practitioners' Union, but we have had no decisions or opinions from them yet.

Mr. H. MARQUAND: Does the hon. lady recollect that it was a definite promise by the medical profession at the time when the payment to general practitioners was referred to adjudication that they would seek to reduce the number of assistants and increase the number of principals in practice? Is she satisfied that the medical profession are giving real coöperation in this matter as they undertook to do?—Miss HORNSBY-SMITH: There has been an increase in partnerships and a reduction in the number who do a long period as assistants. These consultations are going on between the B.M.A. and the M.P.U. and I think the profession are coöperating in this matter where they feel that there is hardship. Mr. HASTINGS said that the B.M.A. committee had already reported and their report was by no means entirely happy about the situation.

Replying to a further question, Miss HORNSBY-SMITH said that on July 1, 1954, 131 assistants were still in posts which they had taken up before July 1, 1949. Mr. HASTINGS: Does not the Minister think that this is a serious matter? Even her own figures show that. While it is admitted that doctors may derive a good deal of benefit from being assistants for a time, does she not agree that for them to go on year after year in that position, as these figures suggest, is a very dangerous situation?—Miss HORNSBY-SMITH: I think we should keep this matter in proportion. There is a steady increase in the trend towards partnerships. Mr. MARQUAND: Would it not be possible to make an inquiry into this comparatively small number of cases to see what the reason is for this long period of assistantship?—Miss HORNSBY-SMITH: We will certainly consider that point.

Lung-cancer Mortality

Replying to a question, Mr. MACLEOD said that the provisional number of deaths attributed to cancer of the lung in 1954 was 16,332. The numbers of deaths so attributed in 1934 and 1944 were 2775 and 6684.

Mr. HASTINGS: Does the Minister realise the great importance to the health of the community resulting from his pronouncements on this subject some few months ago? Will he consider making a similar pronouncement setting forth the increased knowledge up to date resulting from research?—Mr. MACLEOD: I recognise the public anxiety here and I shall be very glad to consider the suggestion. Dr. BARNETT STROSS: Would it not be true to say that whatever may be the cause of this disease—and many people now suspect what may be the cause—it cannot be the ingestion of any foodstuffs that is causing the rise in cancer of the lung, for it would affect women as well as men, and that it does not do?—Mr. MACLEOD: Whatever may be the reason, it is true that the increase is very much more—indeed it is more than twice as great—amongst men than women, which would seem to indicate a special cause.

Child's Treatment in Hospital

Mr. KENNETH ROBINSON asked the Minister why a boy, aged 10, who was admitted to Hampstead General Hospital on March 30 with a fractured and dislocated arm, received no medical attention for more than six hours, during which time he was offered neither food nor a sedative.—Mr. MACLEOD replied: I am very much afraid that the facts are as stated and it is clear that the hospital staff failed grossly in providing proper attention. On behalf of the board of governors and myself I must apologise to the child's parents. I assure them that the board take a serious view of the whole incident and that those responsible have been severely reprimanded. Mr. ROBINSON: Whilst I welcome the Minister's admission of the responsibility of the board of governors for this matter, and, of course, accept his assurance of regret, does he not agree that the public has been led to expect that the teaching hospitals should set a standard of conduct in these matters, and does that not make the incident even more deplorable?—Mr. MACLEOD: No doubt that is true. I am bound to say that the only thing I welcome about this issue is that the hospital at once admitted an error. As we know, errors happen in the hospital service. I deeply regret that this should have happened, and my views have been put very strongly to those concerned. Mr. HASTINGS: Will the Minister make it quite clear that it is his desire that at every general hospital there should be a medical cover throughout the twenty-four hours, and that so many doctors should not live away from their work as at present?—Mr. MACLEOD: It is certainly desirable that wherever possible cover should be provided, if not on a twenty-four hour basis, at least urgently and near.

Requests for Lists of Patients

Replying to a question, Miss HORNSBY-SMITH said that the Minister of Health was not aware that political party organisations were asking doctors for lists of patients for the purpose of the postal vote at the general election.

Mrs. BARBARA CASTLE: I have in my possession circular letters from Conservative associations to local doctors in their areas asking them to supply the Conservative party with the names of blind, sick, and aged patients on their registers in order that they may be contacted with a view to their having a postal vote. Will the Minister institute an immediate inquiry and inform the doctors that this is contrary to professional etiquette and their duty to their patients?—Miss HORNSBY-SMITH: If the hon. lady will let the Minister have the evidence I can assure her that he will look into the matter. The vote is secret and in their individual capacity, it is certainly helpful to see that as many as possible obtain their vote.

Mr. HERBERT MORRISON: Will the hon. lady on behalf of the Minister give an assurance that neither directly nor indirectly will those associated with the National Health Service be coöperators with any political party organisation in connection with the forthcoming election? Is she aware that there was the strongest impression at the last election that such malpractices took place?—Miss HORNSBY-SMITH: I can certainly give the assurance that the Health Service will not be used in this way.

Replying to further questions, Mr. MACLEOD said he would look into this matter at once. Whether he would make a statement on it would depend on the results of his inquiries.

Orthodontic Treatment

Replying to questions Miss HORNSBY-SMITH said that the number of courses of orthodontic treatment approved under the National Health Service for 1949 was 12,000 and the payments made were £300,000. The figures for 1954 were 48,000 and £500,000. Orthodontic treatment was provided under the hospital and specialist services, the school health service, and the general dental services. The number of dentists in England and Wales who in 1954 were each given approval to start more than 100 courses of orthodontics under the general dental services was 42.

Medical Examination of Broadmoor Prisoners

Mr. T. E. DRIBERG asked the Home Secretary if he was aware that a medical report by the principal medical officer of Brixton Prison, dated Feb. 14, 1953, stated that a prisoner was sane and fit to stand trial on a charge of attempting to murder his wife, and recommended him as suitable for voluntary treatment in a mental hospital; that, at his trial five days later, this man was found guilty but insane and ordered to be detained during Her Majesty's pleasure, and that he is still detained at Broadmoor, where his wife and other relatives had found him in apparently normal health; and if, in these circumstances, he would allow an independent medical examination of this patient.—Major LLOYD-GEORGE replied: The responsibility for deciding when a Broadmoor patient is fit to be transferred or discharged rests on the Home Secretary; and my predecessors and I have consistently taken the view that the expert staff of psychiatrists at Broadmoor, who have the patient under constant observation, are in a better position than an outside doctor to advise the Home Secretary on the patient's mental state and future prospects. The answer to the last part of the question is, therefore, "No, Sir."

Mr. DRIBERG: Is the Home Secretary aware that Dr. Mathieson, of Brixton, also said that this man was suffering simply from a mild anxiety neurosis, which should yield to proper psychiatric treatment, but that since he has been in Broadmoor he has had no such treatment whatever? It is obviously impossible for the very efficient and conscientious staff at Broadmoor to give proper psychiatric treatment to the very large number of patients with whom they have to deal. In the circumstances, will the Home Secretary consider either getting an independent opinion or transferring the man to a mental hospital where he can be treated?—Major LLOYD-GEORGE: These cases are very difficult. I am aware of the opinion to which the hon. Member has referred and I have, of course, gone into the case myself with great care. On the information I have I do not think anything can be done. But I am prepared to look at the matter again and I will do so.

Motoring Offences and Blood Tests

Replying to a question, Sir HUGH LUCAS-TOOTH, joint under-secretary of State to the Home Office, said that during the last year no motorist charged by the Metropolitan Police with being under the influence of drink while in charge of a car had requested a blood test, but in one case samples of blood and urine were taken at the request of a doctor called on behalf of a person who had been arrested for such an offence.

Mr. SOMERVILLE HASTINGS: Does the Minister not agree that this test, which has been largely used in other countries, might usefully be tried out in this country so that some idea could be obtained of its real value? At present its value seems to be somewhat uncertain. Will the test be made possible for those who apply for it?

Sir HUGH LUCAS-TOOTH: Opinion about the value of blood tests in these cases is sharply divided, and it would be inappropriate for me to express a view either way at the present time. Research on the effects of alcohol upon driving performance is being carried out by the Medical Research Council and the Road Research Laboratory.

Mr. R. R. STOKES: Have not the police chucked this bit of nonsense as being absolutely unreliable?

Replying to a further question, Sir HUGH LUCAS-TOOTH said that the provisional figures showed that in magistrates' courts in England and Wales there were, during the first nine months of 1954, 1951 convictions of driving, or being in charge of, a motor vehicle while under the influence of drink or drug. The number of resulting sentences of imprisonment was 112.

In England Now

A Running Commentary by Peripatetic Correspondents

THEY say a psychiatrist is a man who goes to the Folies-Bergère to look at the audience, so I went to the Private View day at the Royal Academy. The trouble about Private View day is that you get trampled underfoot by people with one eye on the pictures and the other on the look-out for their friends. But still, it has the advantage that the ladies' hats are more surprising than they are on other days, and the girls seem prettier, and you can watch the artists being casual about their masterpieces. They have a variety of techniques for this. I heard one ask, in incredulous tones, "Do you mean you *like* it?" but whether this was modesty, or surprise that his audience appreciated it, I could not tell. Then I like to see the subjects standing sheepishly near portraits of themselves. I am one of those people who do not get much further in Art than knowing what they like, but I did like the portraits this year; there were several startlingly good ones and very few of those others. I liked the one of the toy monkey because he, unlike most of the other sitters, was not pretending to be blasé about having his picture painted. There were, of course, the usual dreary people sitting in dreary rooms, but I wonder how Charles Spencelayh manages to make ordinary objects so exciting? I suspect that the secret lies in the title he has given to one of his groups—*God's Good Things*. Perhaps it is because I like bouncy dogs, but I was intrigued by *Whippet* in terra cotta, who had curly ears and a curly tail and was very much alive. "And ducks are soothy things, and lovely on the lake . . ." That was another lovely thing, in oak, a mother duck obviously telling her brood a bedtime story. Exciting in a different way is a statue of a nun, with severe, straight lines except for her face and expressive hands. There is so much, too much, to take in, as always. The biggest crowd was consistently round what has now come to be known as "the Annigoni" of the Queen. For the record the most frequent remark I heard in the whole exhibition was "The traffic, my dear, was simply frightful."

* * *

My medical wife and I discussed the mushrooms fully. Growing, they were pleasant-looking things and after consulting the encyclopædia we convinced ourselves that they were edible. We ate them for breakfast the following day and I had a large helping which tasted delicious with bacon. My wife drove me to the hospital where I sat down in the office to attend to some routine papers. Some thirty minutes after breakfast the odd feeling started. I found it difficult to concentrate on my work and noticed a transient diplopia which could be mastered only by an effort. I experienced a curious sensation of being in the room but apart from my body. The voice of someone speaking in an adjoining office seemed a great distance away. Of course this disturbed me, but the probable cause eluded me for a while. Then—The Mushrooms! I grabbed the phone and with some difficulty dialled my home. With great relief I heard my wife's voice, though it was slurred and not too intelligible. In the brief moments of waiting for her to answer I had an awful vision of her having crashed the car on the way home. She too felt very odd and had just realised why. By this time I was getting a bit disorientated, but I sent one of my colleagues off to bring my wife, my daughter, and the lodger into hospital. I then floated rather than walked up to the ward for a stomach-pump session. I was given atropine and intravenous glucose and rapidly felt better.

My wife, who was not treated so soon, became quite confused and went into a state of shock before she reached hospital, but fortunately retained enough presence of mind to insist on picking up the lodger from her office on the way. The three of them were then treated as I was, to the intense indignation of daughter aged eight who had eaten only one small mushroom and felt quite well. They too improved rapidly, but my wife remained mildly shocked for several hours.

I found it impossible to get the fungus identified but assumed that it was one of the types containing a mus-

carine-like alkaloid—possibly *Inocybe patouillardi*. I don't think it could have been *Amanita muscaria*, which from its pictures seems a distinctive fungus quite unlike our specimens.

The story spread rapidly and, needless to say, such an occurrence in a medical family was the cause of much ribald comment. The loudest laugh was enjoyed by my son aged twelve who doesn't like mushrooms and who refused them on this occasion because he didn't like the look of them. His big moment came when he poked his head into my hospital room and said "I told you so!"

* * *

Some of our West End colleagues still bemoan the loss due to war, the B.B.C., and Big Business, of the Langham, and now the Bolivar—its posteriorly situated vestigial remnant—has suddenly closed its hospitable doors. It is heart-rending to see thirsty pillars of our profession being caught out by padlocked doors without so much as a "closed" notice on them. I saw one famous man nip round the corner to check his watch against the All Souls' clock before the devastating truth dawned upon him. Where consultants' fluid-balance and milli-equivalents can conveniently be put in order now, goodness only knows. What with this calamity and the Med. Soc. Lond. having no visible means of support at its northern end, Chandos Street is not what it was.

* * *

Those who heard Pierre Monteux conducting the Royal Philharmonic Orchestra at the age of 80 must have marvelled at his apparently limitless energy. Bruno Walter, one year younger, is to take command of the B.B.C. Orchestra this month. It is only a few years since Toscanini, now 88, electrified us all at the Festival Hall. Vaughan Williams, at 83, would probably call himself an amateur conductor only. Weingartner, Mengelberg, Richard Strauss, and Kussevitzky were all around, or well above, 80 when they died in full harness. Sir Thomas, of course, is a mere stripling at 75; he, Cameron, and Ansermet are a trio of active septuagenarians. Sir Henry Wood had hardly shed any of his habitual load of work when he died at 75.

It is fortunate for the rest of us that these eminent maestros enjoy such long spans. But why do they? Is it because, unlike most surgeons and professors, they keep on working? Or are eminence and longevity associated irrespective of occupation? Quite apart from ex-prime ministers, Augustus John and Brangwyn are well into their eighties; Sir Gerald Kelly and Sir Alfred Munnings are in their late seventies.

A famous but still relatively young conductor once told me that, while in action, he felt "the vital juices flowing down the arms to the heart." Perhaps he was right; perhaps the apparent immunity of orchestral conductors to the more spectacular forms of cardio-vascular collapse is due to the fact that they wave their arms about a good deal.

* * *

How much we suffer from failure to convey our wishes correctly to our patients. Listening to one's colleagues shows how much time and effort are wasted by lack of liaison.

"Lie on your back on the couch—No, on your back, please."

"Show me where the pain comes—No, on your own back please."

"Please stand up—now, raise your right leg—thank you, and now your left leg—thank you, and now get up off the floor."

There is clearly an urgent need to revise the technique of medical questioning, and at the next twelve unselected outpatient clinics we are giving a trial to the following phrases:

"Lie on the couch with your tummy upwards."

"Show me on your own back where the pain is."

"Bend your knee crooked—and now bend it straight."

I would welcome suggestions how to avoid the inevitable contraction of the calf muscle just as I withdraw the tendon hammer from my pocket. "Relax," "Pretend you're asleep," "Don't bother about me," "Go loose," and "Pretend you're dead" have been tried and found wanting.

Letters to the Editor

HASHIMOTO'S STRUMA LYMPHOMATOSA

SIR,—Independently, we have each been interested for several years in Hashimoto's "struma lyphomatosa." In 1953, again independently, we obtained markedly abnormal liver-function tests in some of these cases, a finding of which we have seen no previous record, and to which one of us drew attention in your columns last year.[1] This mutual interest came to light when we met by chance on the slopes of a Yorkshire mountain, after not having met as colleagues for over twenty years. We intend to record our findings in full in due course but some preliminary details may interest your readers.

Owing to a difference of approach there is some lack of uniformity in our case-records, but we are agreed on the main observations.

(1) The presumptive diagnosis is essentially clinical and the condition is commoner than is generally supposed. Although there are certain typical features, including preponderance of cases in middle-aged females, symptoms of subthyroidism of variable degree, and a thyroid gland easily felt and abnormally firm, we would stress that not infrequently the patient first visits her doctor for symptoms not quickly ascribed to thyroid disturbance, such as lassitude, muscle and joint pains, increasing weight, and changed facial appearance. The efficacy of modern treatment by oral dried thyroid emphasises the need for the diagnosis of Hashimoto's disease to be considered more readily. We have studied about 25 patients, in nearly two-thirds of whom the diagnosis has been confirmed by surgical section.

(2) The basal metabolic rate is subnormal in most of the patients when first seen, but a minority in the early stage show signs and symptoms of hyperthyroidism. Anæmia is not a characteristic feature.

(3) The liver-function test most consistently abnormal in the untreated patient is the colloidal-gold test; thymol-turbidity and flocculation tests generally run parallel with it. In a few patients the serum-alkaline phosphatase is slightly or moderately raised. The bromsulphalein test may be abnormal, but the galactose tolerance has been normal in the 5 patients examined. After treatment by dried thyroid gland, the liver-function tests in some patients return to, or towards, normal within a period of months, but in others the return is much slower and we have seen the tests still grossly abnormal after more than two years. Electrophoresis shows a raised and abnormal serum-globulin level in a few patients. In general, however, there appears to be no close relationship between the results of the flocculation test and the plasma-cholesterol, or the basal metabolic rate.

(4) We suspect that gross liver disease may arise in struma lymphomatosa. One of our patients, observed for seven years, now has a liver which is greatly enlarged and abnormally firm, and a palpable spleen. The spleen is palpable in 2 of 17 other patients. In the 1 patient in whom surgical biopsy of the liver has been possible, however, the histology was normal.

(5) We have not yet seen such gross changes in the liver-function tests in typical primary myxœdema, although lesser degrees of change have been observed.

(6) We are impressed by the steady diminution in the size of the thyroid gland during treatment by dried thyroid; this point is not mentioned in the literature, but it was emphasised by Crile in his Moynihan lecture to the Royal College of Surgeons in January, 1954.

Department of Pathology, General Hospital, West Hartlepool. R. T. COOKE.

Crumpsall Hospital, Manchester. R. W. LUXTON.

1. Cooke, R. T., Wilder, E. *Lancet*, 1954, i, 984.

STAPHYLOCOCCAL INFECTION IN THE NEWBORN

SIR,—We fear that others, like ourselves, may interpret the paper by Dr. Forfar and his colleagues (March 19) not simply as a clinical and bacteriological study but as a recommendation that all infections in newborn babies in maternity hospitals should be treated with erythromycin. We feel that such a recommendation would be misguided and we should like to comment upon it. The clinicians amongst us made the mistake of adopting just such a policy some years ago, and we have lived to see its unfortunate long-term consequences. We have also learnt more about the nature and dangers of staphylococcal infection in the newborn, as a result both of close collaboration between clinicians and bacteriologists and of more critical clinical observations in our hospital during the past few years. We accordingly reversed our previous policy some time ago, and have as yet had no cause to regret this decision. The fact that the antibiotic with which we were concerned was penicillin, not erythromycin, does not appear to be relevant since, as Forfar and his colleagues admit, there is evidence that sooner or later staphylococci become resistant to erythromycin too.

For us the crucial fact is that the more frequently the staphylococci in a particular community are exposed to a particular antibiotic, the more likely are they to become resistant to that antibiotic. If there were any overriding advantages to be gained by using an antibiotic as freely as Forfar and his colleagues recommend, the inevitable disadvantage would have to be accepted. But although they state that "Edmunds et al. (1955) show that early recognition and early treatment of minor staphylococcal infection in the newborn play an important part in preventing serious sepsis," we can find no evidence whatever to support this statement in the paper to which they refer.[1]

We have not treated any case of skin sepsis when first seen during the past twenty months, unless it was an extensive pustular rash in a small premature baby, or we had other grounds for believing that the baby was ill.

During this period 163 cases of skin sepsis have occurred (pustules and paronychiæ): 11 were treated from the start because of one of the indications we have mentioned; 11 were treated later because the local lesions were extending after a period of forty-eight hours' observation; and the remaining 141 cases (86%) received no treatment of any kind since they remained well and the local lesions were clearing or had cleared after forty-eight hours.

During the same period of twenty months virtually all cases of sticky eye developing after the first twenty-four hours of life were treated simply by local instillation of 10% sulphacetamide. The cases which developed within the first twenty-four hours were left untreated unless they failed to resolve spontaneously during a period of forty-eight hours' observation, because we knew as a result of earlier work in this hospital [2] that a *Staphylococcus aureus* can be cultured from less than 10% of these early cases. Altogether 470 cases of sticky eye were recorded during the twenty months.

We should like to mention that no serious infection of any kind (pneumonia, osteitis, &c.) developed in any of the 633 babies suffering from a superficial infection and treated on the conservative lines we have indicated.

We did encounter a serious infection during this period, in a baby who died of a staphylococcal pneumonia on the thirteenth day of life; but there was no clinical superficial infection in this baby at any stage. We also had to use a systemic antibiotic on a number of occasions because a baby appeared to be ill and probably infected, in the absence of any minor superficial infection whatever.

We feel that this experience supports our present policy of restricting the use of all antibiotics to an absolute minimum, since it has shown that this is not only desirable in theory but also safe in practice. The real indication for antibiotic therapy seems to us to be a clinical diagnosis of systemic infection (with or without superficial sepsis). This indication is uncommon, but an effective antibiotic must be used at once in these circumstances and this is an urgent matter on which the baby's life may depend. We feel that our chance of being able to use any particular antibiotic with confidence (before the sensitivity of the organism from the particular case is known) depends upon our past conduct in relation to that antibiotic. We are very glad to be in a position to keep erythromycin in reserve for the case that really needs it, and whose life may very well depend upon it; and we would like to think that others were exercising a similar restraint. We cannot understand what has prompted Forfar and his colleagues to reverse the much more selective policy which they outlined in 1953.[3]

S. D. M. COURT
C. A. GREEN
J. G. P. HUTCHISON
G. A. NELIGAN.

Princess Mary Maternity Hospital, Newcastle upon Tyne.

1. Edmunds, P. N., Elias-Jones, T. F., Forfar, J. O., Balf, C. L. *Brit. med. J.* April 23, 1955, p. 991.
2. Hutchison, J. G. P., Bowman, W. D. Unpublished data.
3. Forfar, J. O., Balf, C. L., Elias-Jones, T. F., Edmunds, P. N. *Brit. med. J.* 1953, ii, 170.

ACID-FAST BACILLI IN ACHALASIA OF THE CARDIA

SIR,—Dr. Davies and Dr. Roberts (April 23) rightly emphasise the need for critical assessment of the finding of acid-fast bacilli in the sputum in cases of achalasia of the cardia with respiratory symptoms. A diagnosis of pulmonary tuberculosis may wrongly be made if such organisms are not cultured.

Acid-fast saprophytes are not uncommon findings in sputa in a number of other chronic pulmonary diseases and it is doubtful if they play any important rôle in them. In the lipoid aspiration pneumonia of achalasia of the cardia, however, these organisms may act as pathogens and the bacteriological findings must not be summarily dismissed. A fatal infection of this nature and a review of the subject has been published.[4] Although mycobacterial strains freshly isolated from such cases generally show an unusual virulence for experimental animals, especially mice, it is the modification of the host's response brought about by the presence of fat in the pulmonary alveoli coating the organisms that appears chiefly responsible for the resulting illness. The cultural characters of the strains isolated vary from case to case and so these pulmonary infections differ from some of the recently reported non-tuberculous mycobacterial skin infections, such as that due to *Mycobacterium balnei*.[5]

Institute of Pathology, Queen's University of Belfast. JAMES B. GIBSON.

4. Gibson, J. B. *J. Path. Bact.* 1953, **65**, 239.
5. Linell, F., Norden, A. *Acta tuberc. scand.* 1954, suppl. no. 33.

A BARBITURATE ANTAGONIST

SIR,—I have read with interest the letter of Dr. Morgan McElligott (April 16) in which he reports no change other than a deepening of respirations after the administration of 240 mg. of ββ-methyl-ethyl-glutarimide ('Megimide') to a patient who had taken gr. 72 of phenobarbitone. Dr. McElligott is not quite correct in thinking that the lack of clinical improvement was due only to insufficient dosage. Certainly the dose for this case would have been 1·0 g., and probably even then the patient would have regressed and required one or two treatments more. But the important point is that treatment was not started until *six* days after admission.

Megimide appears to be a specific antagonist to barbiturates. At the end of six days there would be little barbiturate in the body. By this time, however, there would have been extensive cellular damage—e.g., cerebral œdema—and one would not expect any drug to reverse this injury.

Since we commenced using megimide we have treated fifty cases. Two are noteworthy. In the first the patient had taken gr. 100 of phenobarbitone and treatment was not started until thirty-six hours later. This was a difficult case, and ten treatments were given before the patient recovered. In the second case gr. 114 of quinalbarbitone was consumed, but the patient was treated within three hours. An uneventful recovery ensued with one treatment.

Department of Pharmacology, University of Melbourne, Australia. F. H. SHAW.

A VISIT TO KOLTUSHI

SIR,—Mr. Ruscoe Clarke and Dr. Leonard Crome (April 2) write that the objective of study at Koltushi "was an understanding of the functioning of the organism in its unity with the environment." They state that among the "general principles" used at Koltushi one was expressed in the statement: "Descartes knew already that environmental factors determine the functioning of the organism by means of reflexes." In their conclusion, they state that they "had no more than a glimpse of the new science." They ask "was it a glimpse into the future?"

We are entitled to ask whether a science based on the study of the "conditioned reflex" is so new. Is it a study likely to provide the kind of future we should all desire should come about? In his introduction to *The Use of the Self* by F. Matthias Alexander, the late John Dewey wrote in 1932:

"The school of Pavloff has made current the idea of the conditioned reflex. Mr. Alexander's work extends and corrects the idea. It proves that there are certain basic, central organic habits and attitudes which condition every act we perform, every use we make of ourselves. . . . This discovery corrects the ordinary conception of the conditioned reflex. The latter as usually understood renders an individual a passive puppet to be played upon by external manipulations. The discovery of a central control which conditions all other reactions brings the conditioning factor under conscious direction and enables the individual through his own coördinated activities to take possession of his own potentialities. It converts the fact of conditioned reflexes from a principle of external enslavement into a means of vital freedom."

Mr. Alexander enables a person to provide for his use a self acting as a unity with its environment by the following procedure:

The person inhibits his habitual reaction to a stimulus. Thus he allows the head to go forward and up. This sets in motion an innate reflex whereby the self as a whole instead of firstly directly reacting to its environment indirectly firstly acts as a whole outwards on the environment in all directions in the greatest possible degree. Thereby the integrative action of the central nervous system is given freedom to work at its best. Thereby the person is provided with a unified whole self he may use for reacting to his environment with kinæsthetic information about his guidance of his actions working in the best way.

Bolton, Lancs. MUNGO DOUGLAS.

ARGININE DEFICIENCY AND MALIGNANT DISEASE

SIR,—I noticed an abstract of a paper by D. L. Horrigan [1] reporting the excretion of uracil in 3 out of 5 patients suffering from myeloid leukæmia. It occurred to me that there might be a possible connection between this observation and the finding [2] that the growth inhibition of a micro-organism by uracil was prevented by arginine. It may be that uracil encourages malignant change by suppressing the growth of normal cells rendered arginine-deficient by the invading neoplasm, which then grows at their expense. The simplest test of this hypothesis would be the administration of arginine in cases of experimental or human cancer. As a microbiologist I am not equipped to make such tests, but some of your readers may care to consider the possibility.

1. *J. clin. Invest.* 1954, **33**, 901.
2. *Nature, Lond.* 1950, **166**, 1035.

Banstead, Surrey. E. J. MILLER.

REGISTRARS AND REGISTRARS

SIR,—I am a little surprised to read in your issue of April 23 so embittered and venomous an epistle as that signed by Registrar (W plus). The writer's ignorance of military ranks seems equalled by his lack of knowledge of teaching hospitals. If by any chance he is likely to become a "failed registrar" he may perhaps be able to take shelter under the Strachan umbrella.

London, S.E.1. J. J. CONYBEARE.

SIR,—Registrar (W plus) has raised a subject of keen interest to all registrars. One point which requires further stress in the inequality of duties is the fact that the same difference in the amount of work done by registrars also exists in the teaching, but non-professorial, units.

There are many registrars (W plus) working in teaching hospitals—not only in peripheral hospitals, as your correspondent suggests. The group he describes as registrars (T) undoubtedly exists in professorial units. They add little or nothing to the every day (and night) running of a hospital service, but they use the time and facilities to acquire further qualifications, and write numerous papers. On these achievements they are often elevated to consultant status in preference to registrars (W plus) with a wealth of practical and useful clinical knowledge and experience.

Of course, many of these experimental studies are of considerable value; but it is unfair, with the ever increasing expense of the National Health Service, that an expanding number of hospital staff should be secluded in this type of work, whilst others of equivalent status provide a 24-hour hospital service. Clearly the proper time for writing theses for higher degrees and publishing articles is when one has sufficient knowledge and experience to write with authority on the subject of one's choice. At the moment many higher degrees are obtained by men working in a laboratory on a subject chosen and supervised all through by their chiefs, who finally examine them. Unfortunately in the keen competition for obtaining a consultant post, higher degrees all count; but in reality are these higher degrees of any real clinical value? I doubt it!

REGISTRAR (W).[2]

PROTECTING THE MOTORIST

SIR,—There can be no doubt that in the near future motorists will be more willing to use safety devices against motor-car accidents. Crowding on the roads plus a high proportion of fast cars will ensure this.

Most car accidents are preceded by a second or two of warning. During this period the natural reaction and behaviour of most passengers can be imagined without description.

May I propose the following emergency drill for passengers, for consideration by those who have opportunity for experimental examination of the idea, or who have clinical experience of the type of injury in question? This drill is specifically designed to avoid injuries to the head and face when passengers are flung forwards against the windscreen.

The feet are raised and pressed against the dashboard or against the back of the front seat in the case of rear passengers. The hands are cupped under the chin, the elbows being wedged in the groins. This would prevent whip-lash strain of the neck.

If this method were to gain medical approval, it might be possible to include it in the Highway Code.

Hornchurch, Essex. I. H. J. BOURNE.

MEDIAN-NERVE PALSY AND ACUTE INFECTIONS OF THE HAND

SIR,—May I add a similar case to those described by Mr. Bailey and Mr. Bolton Carter in your issue of March 12 ? It is one of 42 cases of carpal-tunnel syndrome treated during the last four years, upon which a report is now being prepared.

A butcher, aged 49, was seen on July 7, 1953, with a pulp infection of the right thumb which had been drained two days previously. He had had systemic penicillin for one day before incision and for the next two days, and this was continued. He had much pain in the hand and wrist, aggravated by extension of the fingers, which were held in the position of rest. Movement of the middle and ring fingers was greatly restricted, the index and little fingers less so. The thumb could be moved more freely but this caused some pain. Pain at rest was in the median-nerve distribution and was severe enough to keep him awake. There was tenderness on the palmar aspect of the hand over the carpus and wrist-joint, with diminution of sensation of light touch but not pin-prick over the median-nerve distribution in the hand. The dorsum of the hand was considerably swollen.

For the previous eighteen months he had had pain in the right hand with acroparæsthesiæ in the distribution of the median nerve every Friday night, which had repeatedly woken him. On Saturday mornings the hand was stiff and numb with limited finger movement and some residual, though lessening, pain ; this subsided completely by midday on Saturday, not to recur until the following Friday night. These symptoms had become progressively worse until he had lately been having pain on occasional nights during the week, sufficient to awaken him. (Butchers are busy in South Australia on Fridays, because they have to prepare large orders for the weekend for a population that eats a lot of meat ; and they do not open on Saturdays.)

In spite of continued penicillin and rest in a plaster back-slab with elevation, the hand grew steadily worse, the fingers more immobile, and their movement more painful, until finally he could have no finger moved passively into extension without great pain. Sensation loss by July 11 was complete to light touch and much impaired to pin-prick over the median-nerve distribution. Tenderness at the wrist was much increased.

Decompression of the median nerve was therefore done on July 12 by longitudinal incision through a convenient palmar crease. The flexor retinaculum was divided fully. The nerve was found to be swollen and reddened in the proximal half of the carpal tunnel and relatively narrowed and dark red in its distal half. A little serous fluid was present but there was no abnormality of the tendons. The skin was loosely sutured, and it healed well. Convalescence was slow but satisfactory. He was back at work in four weeks, although sensory loss and strength of the hand did not recover fully for four months.

On April 18, 1955, he said that he has had no trouble since, the hand has remained normal, and his working capacity is unimpaired. The scar is supple, pain-free, and hardly visible.

I feel little doubt that the infection caused an inflammatory swelling in the carpal tunnel which converted a periodic occupational carpal-tunnel syndrome into a relative emergency. I think it probable that Mr. Bailey and Mr. Bolton Carter's cases fall into the same category.

In case 1 there was a history of "rheumatism" in the hands which may well have been a carpal-tunnel syndrome, and they mention osteo-arthritis in the left hand, which in the carpus may be a factor in the production of the syndrome. In case 2 there is no mention of previous history, but it is just possible that inquiry might reveal that the patient had previous symptoms of median-nerve compression. Both of these patients fall into the age and sex group most commonly affected by carpal-tunnel syndrome—i.e., women at or about the time of the menopause. Case 1 had been having symptoms for years, and these probably first arose at the time of the menopause.

In both of these cases the early and marked loss of sensation was particularly interesting. As well as the butcher, I have seen it in one other patient—a man with a severe carpal injury and projection of part of a fractured lunate into the carpal tunnel. His flexor retinaculum was divided and the projecting bone removed three weeks after the original injury, but by that time he had complete anæsthesia over the median-nerve distribution in the hand, which took six months to recover. There was acute tenderness over the median nerve at the wrist, but apart from some loss of finger movement by mechanical interference, there was little motor impairment.

The restriction of finger movement in all these cases must be due to mechanical interference in the carpal tunnel by compression of the tendons. The dominance of sensory loss seems to be a feature of the more acute lesions ; in the usual and much less acute carpal-tunnel syndrome, wasting of the thenar eminence and weakness usually come before definite sensory loss. Such patients, however, often complain of numbness at the finger-tips, especially in the early morning, which interferes with knitting and sewing.

I agree with Mr. Bailey and Mr. Bolton Carter that the compression in their cases was the result of inflammatory exudate and consequent ischæmia of the median nerve, but I think that there was a pre-existing lesion which narrowed the carpal tunnel, predisposing to the nerve compression. This may in some cases be a stenosis comparable to De Quervain's disease or some other factor, possibly hormonal ; but whatever the predisposing factor, the median nerve lies in the carpal tunnel in a particularly vulnerable position. In none of my cases has any disability resulted from division of the flexor retinaculum. This is not surprising in view of the fact that all strong movements of the human hand occur with the wrist in extension. The flexor retinaculum in man seems to be a useless structure.

I was interested to read that Mr. Bailey and Mr. Bolton Carter required a longitudinal palmar incision to be sure of adequate exposure and division of the flexor retinaculum. I have tried the transverse wrist incision, found it inadequate, and reverted to the longitudinal. There are objections to this incision, but in practice they all heal rapidly and well with no disability, especially if carefully made in a crease.

As soon as the diagnosis of median neuritis from compression has been established I make it a rule to divide the flexor retinaculum as soon as possible, to avoid the chance of irreversible damage to the nerve. The only exception to this rule is in menopausal women with mild symptoms, which may sometimes be completely relieved by œstrogens. But should there be no improvement within a short time, the rule still applies.

Royal Adelaide Hospital,
Adelaide, South Australia. J. D. SIDEY.

IRON-DEFICIENCY ANÆMIA IN PREGNANCY

SIR,—The question of iron therapy in pregnancy is a topical one and articles such as that by Dr. Gatenby and Dr. Lillie in your issue of April 9 are very helpful in dealing with the practical aspects of this subject.

May I make one or two comments on points made by them ? It is true that there is a high incidence of intolerance to the ordinary ferrous-sulphate tablets, but I have hardly ever found intolerance to enteric-coated ferrous-sulphate tablets, so it is to this form of therapy I turn when the former fails. The enteric-coated tablet costs only about double the ordinary variety. Ferrous gluconate, however, I am told costs about ten times as much as the simple ferrous-sulphate tablet. This may be worth considering. It is true that some might argue that there is a danger of the enteric-coated tablet passing through the gut undissolved, especially as the ordinary tablet passes a long way (as demonstrated radiologically). However, the clinical response appears to be adequate, so I am not unduly disturbed by this.

Another point is in connection with parenteral forms of iron therapy, so widely used now. Why should an anæmia discovered late in pregnancy be an indication ? All the evidence I have seen shows that the response to oral iron should be as quick as to parenteral iron.[1] A

1. Jennison, R. F., Ellis, H. *Lancet*, 1954, ii, 1245.

quicker response, then, cannot be claimed. If one ensures that the patient can take, and is taking, her oral iron, by asking her a few days later, then intolerance of oral iron is no argument. Finally, I believe that a form of iron-deficiency anæmia which fails to respond to oral iron is very rare indeed. Most of these cases will prove to be megaloblastic if a sternal-marrow examination is made.

St. James's Hospital, Leeds, 9. T. F. REDMAN.

MADE-UP WORDS

SIR,—"Bibliotherapy" indeed[1]! How long are we to tolerate this pompous, humourless, self-important use of long made-up words to describe such a simple procedure as providing helpful books for a child or his parent to read?

Institute of Diseases of the Chest, London, S.W.3. J. G. SCADDING.

RADIOLOGY OF PLACENTA PRÆVIA

SIR,—Dr. Blair Hartley is doing excellent work in using his special technique for visualising radiologically the *calcified* placenta in localising its position. This, he told us in his letter of last week, he can do in rather less than 1 in 3 cases. Just in case there are some, among the many who I hope will read his letter, who have not yet been sufficiently convinced of the undoubted merits of ordinary soft-tissue placentography to take it up, I feel I must reassure them that it is quite unnecessary for calcification to be seen in order to determine the placental position.

Dr. Blair Hartley says that seeing the calcified placenta is factual evidence; agreed, but it would be a pity if those still hestitating to adopt soft-tissue placentography became so disappointed at their failure to *see* the placenta in over two-thirds of their cases that they did not finally adopt it and thus denied to themselves and their patients the great advantages of the method.

The London Hospital, E.1. ROBERT PERCIVAL.

FUNCTIONAL SYMPTOMS IN ORGANIC DISEASE

SIR,—In the final paragraph of Dr. Barham Carter's somewhat breezy article last week, there occurs this sentence: "The great tragedy, of course, is to miss the organic."

It is surely sad that in 1955 it still needs to be pointed out that this attitude reveals a long out-dated overvaluation of the soma, and that the tragedy of missing the psychogenic is neither less nor greater but exactly equal to the tragedy of missing the organic.

Thirteen years ago an article appeared in *The Lancet*[2] entitled Neurosis Simulating Organic Disorder. This dealt with 50 cases which had been referred by Army doctors to an E.M.S. hospital with a definite diagnosis of organic disease, and in which the condition was ultimately found to be purely psychogenic. Any case in which even the suggestion of nervous disorder had been raised was excluded from the series.

34 of these patients had been admitted to the medical and surgical wards, and constituted 20% of the hospital intake for the 3 months covered by the investigation;

8 of these patients had spent between them 96 weeks in various hospitals and 106 weeks on light duty;

19 of these patients had between them been radiographed 30 times, including 12 barium meals, 2 barium enemas, and 2 intravenous pyelographies;

7 of these patients had received physiotherapy totalling 35 weeks' inpatient and 56 weeks' outpatient treatment.

All this staggering waste of professional time and public money was not merely useless to these patients, but actively harmful to them in that it confirmed their original fears that they had some serious organic disease. In many cases it probably made them thereafter inaccessible to psychotherapy and condemned to a life of invalidism.

I suggest that this also is a tragic issue. I suggest that while both these types of medical error are tragic, "the great tragedy" lies in the lack of that balanced psychosomatic approach which would make a doctor as ashamed of missing a psychogenic disorder as he now is of missing an organic one.

London, W.1. ALAN MCGLASHAN.

1. *Lancet*, April 23, 1955, p. 858.
2. Cook, G. T., Sargant, W. *Ibid*, 1942, i, 31.

MASKED EPILEPSY

SIR,—I have closely followed the arguments in relation to Dr. Wallis's paper of Jan. 8. If one agrees that pain in the leg, cyclical vomiting, headaches, pyrexia, and abdominal pain are fairly common manifestations of epilepsy, how far does this help in the treatment? Are these cases the forerunners of Halhuber's autonomic dystonias,[1] or the "*Manager-Krankheiten*" of the next generation?

I agree with Dr. O'Neill (April 2) and his tension theory. These cases need more than phenobarbitone. But an exploration of the child's mental state and his environment must take too long and there are too few psychotherapists. I look forward to controlled research using hypnotherapy. Tension appears to be rapidly destroyed and the child is defended against himself. As Bramwell says[2]: "He becomes more in control of his organism."

London, W.1. GORDON AMBROSE.

SANATORIA

SIR,—I read Dr. Edwards's letter last week with interest. While agreeing to a large extent with what he says, I think there is one factor he has not mentioned—namely, that it is quite possible that in the near future patients will refuse to go to sanatoria many miles distant from their homes.

As regards teaching tuberculous patients "to live with their disease," I would say that diabetic patients learn to live with their disease very satisfactorily without having to go to special institutions for the purpose. Nevertheless, I quite agree that there is still a place for sanatoria in the treatment of tuberculosis, provided they are near the centres of population that they serve.

Hastings. A. W. ANDERSON.

THE DIFFICULT APPENDIX

SIR,—Every young general practitioner should read the article by Mr. Kerr in your issue of April 9, for it reveals the many difficulties in such a common disorder; and older readers may be consoled over their own failures, either in not operating soon enough or in removing a normal appendix. Two of my own cases may throw some light on our difficulties.

One hot summer a 7-year-old boy suffered from indigestion and diarrhœa. He was still playing with his friends because he had no fever, pain, or vomiting, till sent home by another mother because he was incontinent of liquid fæces. He was put to bed by his doctor, who was told about generous abuse of unripe apples. Bismuth was prescribed. Three days later, though not complaining of any pain, he was admitted to hospital suspected of salmonella infection (leucopenia, slight splenomegaly, and diarrhœa). In a couple of days he seemed to improve. He had neither fever nor pain, but a leucocytosis developed. A surgeon concluded that there was no surgical cause, and that the condition was probably paratyphoid. That night the boy collapsed with upper abdominal pain and rigidity, black vomit, and meteorism. A perforation was suspected and the abdomen was opened, but a gangrenous

1. Halhuber, M. J. *Ars Medici, Liesthal*, 1953, 43, 462.
2. Bramwell, J. M. Hypnotism. London, 1930.

retrocæcal appendix and an abdomen full of pus was found. The boy died three hours later.

A 6-year-old girl complained of colic and vomiting. Her temperature was slightly elevated. No typical muscular defence could be found in the abdomen, but by palpating deeply in the cæcal region some resistance was noted. The appendix was removed, but it was only slightly red. No pathological examination was made. Her general condition deteriorated, with continuous vomiting, meteorism, and fever. When I first saw her the child was seriously ill, with pinched nose, acetonuria, and leucocytosis (23,000 per c.mm. with shift to the left and toxic granulations). X-ray examination of the chest showed that the diaphragm was high and moved poorly, but there was no other abnormality. An intravenous drip of glucose-saline solution followed by plasma gained time for arguments to be considered in favour of reopening the abdomen. Within two hours the child underwent a marvellous change: no vomiting, no fever, less meteorism. The view was that this was a case of cyclic vomiting with acetonæmia. Within a week the child was discharged perfectly fit.

Hilversum. D. P. R. KEIZER.

POLIOMYELITIS VACCINES

SIR,—The Salk anti-poliomyelitis vaccine is prepared from monkey-tissue cultures. Is it certain that injection of this preparation will not produce rhesus antibodies when injected into susceptible human subjects, most especially those already sensitised?

Westminster School of Medicine, London, S.W.1. J. G. HUMBLE.

RUPTURE OF LAPAROTOMY WOUNDS

SIR,—In reading Mr. Standeven's article of March 12 and the subsequent correspondence I have been struck by the lack of reference to what I believe to be a most important feature. I have re-sutured over 30 "burst abdomens," and in all cases I have noticed the firm adherence of part of the prolapsed bowel or omentum to the edges of the peritoneum and the subcutaneous tissues. Surely this suggests that some part of the peritoneum has given way at an early stage. Small gut or omentum protrudes and lies just deep to the skin. Peritoneal fluid escapes and (I believe) delays healing of the superficial layers. When the skin stitches are removed the whole wound disrupts and more bowel may then prolapse.

Mr. Standeven and Mr. Walsh (March 26) rightly stress the significance of the serous discharge. In my experience this always indicates an impending rupture. In such cases inspection and percussion may demonstrate that small bowel lies just below the skin.

I believe that the most important layer of the abdominal wall is the peritoneum. Unfortunately it is the weakest. If the patient is straining at the time of its suture the peritoneum may split at right angles to the line of suture. In several cases I have found the suture line to be intact but bowel escaping just lateral to it.

I doubt if the incidence of dehiscence of laparotomy wounds is in any way influenced by such general factors as anæmia or protein or vitamin deficiency—or even local sepsis. If the peritoneum stays intact there will be no burst abdomen. I feel therefore that Mr. Standeven's distinction between early and late ruptures is an artificial one. If the skin stitches are left in till late the skin edges will probably hold. The later a burst abdomen occurs the more difficult it is to separate part of the bowel from the subcutaneous tissues.

In my own experience I have found that:

(1) Transverse or oblique incisions are less likely to rupture than vertical ones because the pull of the abdominal muscles does not tend to separate the peritoneal edges.

(2) The abdominal wall must be relaxed until peritoneal closure is complete.

(3) Nylon is unreliable.

(4) Short ends of knots must be left long and the gap between stitches kept short.

(5) The peritoneum is less likely to split if a horizontal mattress suture is used.

The London Hospital, E.1. A. J. WALTON.

SIR,—Like other correspondents, I found catgut and monofilament nylon unsafe in suturing the rectus sheath. Interrupted thread and silk was secure but tedious to insert. For three years now I have been using continuous braided nylon (Finlaison's no. 6, green). It is pleasant to use, and, so far, safe. Although there have been some infected wounds it has only once been necessary to remove the suture.

Braided nylon has more elasticity than monofilament nylon so should be less likely to cause the tight feeling in the wound mentioned by Mr. Oldham (April 16). This sensation has been mentioned by only one patient, but has not been asked for specifically, so may well be more common. Certainly the knots are unobtrusive.

London, W.1. A. M. DICKINS.

HYPOGLYCÆMIC EFFECT OF DIMERCAPROL

SIR,—Concerning the preliminary communication by Dr. Butterfield in your issue of March 5, the papers on sulphur and diabetes mellitus, published by Prof. Andreu Urra and myself from the medical clinic of the University of Seville, are perhaps unknown in Britain. These papers were based on a series of experiments which are the subject of my thesis on the problems of sulphur and uric acid in diabetes mellitus.[1] Professor Urra and I have also published another paper on sulphur and the metabolism of glucosides in diabetes mellitus.[2] In these investigations, low levels of glutathione were usually found in diabetic blood, and experimentally alloxan diabetes was prevented by giving preparations of sulphur. We treated diabetics with dimercaprol and found only a slight tendency to reinforce the action of insulin, and hyperglycæmia and glycosuria improved.

Seville. MIGUEL RIOS MOZO.

BURNS FROM ELECTRIC BLANKETS

Mr. F. Grisley, B.SC., managing director of the Warm-Glow Co. Ltd., writes:

In your issue of April 2, Dr. Neville Davis reports an accident with an electric blanket. To avoid risk of accidents the manufacturers normally instruct the user to switch off the blanket before getting into bed, but people often disregard this advice. Alternatively, a waterproof sheet may be used between the blanket and the sleeper. This also may be disregarded, or a worn or pervious sheet used, with disastrous results. The use of an earth, as suggested by Dr. Davis, is impracticable and even dangerous, for the blanket should be an earth-free appliance with no exposed metal parts.

In 1948 my company introduced a plastic-covered waterproof element into all our blankets. This not only prevents danger from bed-wetting, but it also enables the whole blanket to be immersed for laundering. The plastic covering used is stable and flexible, and lasts indefinitely. This particular kind of accident, therefore, need never occur.

PLASTIC APPLIANCES MOULDED DIRECT TO PATIENT

Mr. R. A. E. Walker, secretary of the National Research Development Corporation, writes:

"In his article of April 23 Dr. Brennan refers in a footnote to patent application no. 16668/54. It may not be clear to your readers that this application relates to the proposals communicated to us by Dr. J. T. Scales, of the Institute of Orthopædics, Royal National Orthopædic Hospital, Stanmore, for the preparation of composite materials of 'Polythene' (polyethylene) and 'Moltopren,' (polyurethane) and the moulding of surgical splints therefrom by application to plaster casts or directly to the patient. The patent rights in Dr. Scales's invention have been assigned to the Corporation for exploitation in accordance with the Development of Inventions Act, 1948. Application may be made to the Corporation for further particulars."

1. *Hisp. Méd.* (in the press).
2. *Folia Clin. Internat.* May, 1953, no. 5.

Obituary

EGBERT COLEBY MORLAND

M.B., B.Sc. Lond., M.D. Berne, F.R.C.P., F.R.C.S.
EDITOR OF THE LANCET, 1937-44

IN the development of a journal a few men and women play outstanding parts. The influence of Dr. Morland's original mind and new points of view was apparent from the time he joined the staff of *The Lancet* in 1915, and it continues through those he taught.

In few ways an ordinary man, he brought to his main task a knowledge and experience as unusual as it was useful.

He was born on Sept. 3, 1874, the fifth son of Charles Coleby Morland, J.P., of Croydon, and his wife Jane Fryer. The Morlands and the Fryers were Quakers from the North of England, and the Croydon family was both brilliant and unconventional. Egbert, a clever but uneasy boy, was sent to the Whitgift Grammar School and then to Bootham, the Friends' school at York. A taste for science was confirmed by a period at Owens College, which also gave him a lifelong bond with Manchester. He took his B.SC. with first-class honours in zoology, and went on to St. Bartholomew's Hospital with a senior scholarship. At Barts he won the Matthews Duncan prize and was vice-president of the Abernethian Society; and after taking the London M.B. in 1898, with the gold medal in physiology and honours in anatomy and organic chemistry, he became successively ophthalmic house-surgeon and house-physician at his own hospital, and house-physician at Wolverhampton General Hospital. His next appointment, in 1901, was at Great Ormond Street; and it was then that the natural sequence of his career was rudely broken. He developed tuberculosis.

Like many another medical victim of this disease, he presently found himself making it his special study. The first fruit of this new interest was an essay on the design of sanatoria, entered for an international competition held in 1902 before the King Edward VII Sanatorium was built at Midhurst. There were 180 competitors, and with the aid of his architect brother Morland gained third prize for his plans, which were published in the first issue of *The Lancet* for 1903. The new phase in his life was soon established; for after living for a while in Switzerland to recover his health he decided to remain and make his home in the mountains. In 1903 he married Mary Windsor Latchmore, a woman of zest and character who helped him devotedly till her death in 1948; and when he had taken the Swiss Federal Diploma they settled at Arosa, where he practised in three languages and from 1907 to 1914 directed the Villa Gentiana, an English sanatorium. In 1905 he was writing in these columns, with W. R. Huggard, on the action of yeast in tuberculosis and its influence on the opsonic index, and his M.D. thesis at Berne in 1907 was on opsonins—a subject then in the bacteriological forefront. From the German he translated Turban's *Diagnosis of Tuberculosis of the Lung* and Bandelier and Roepke's *Tuberculosis in Diagnosis and Treatment*. In 1913 he produced a small book, written with Clive Rivière, on *Tuberculin Treatment*, and a paper on the technique of artificial pneumothorax.

This phase was ended by the outbreak of war, and the next began almost by chance. Now some 40 years old, he left Switzerland to join in the Society of Friends' relief work on the Marne. Before doing so, however, he had displayed his journalistic talent by abstracting for *The Lancet* a statement by Paul Eltzbacher on the food-supply of the German people; and when this twenty-column contribution arrived one day just as the journal was going to press, the editor had paid it the compliment of holding back the week's issue until it could be included. When Morland returned to London from the Marne and called at the old *Lancet* office at the corner of Bedford Street and the Strand, Sprigge was in difficulties because Gerald Horner, then assistant editor, was serving in the R.A.M.C.; so he said to Morland "why not stay and help?" And Morland stayed—for 29 years.

At this point one might well follow the precedent of the Hebrew biographer who kept referring his readers to the book of the Chronicles of the Kings of Israel and Judah. But though the bound volumes of *The Lancet* since 1915 contain most of the acts of Morland, and would have been very different without him, what he did himself is inextricably mingled with what other people did. In an effort to analyse his influence it has been truly said that he found the journal humane but left it human; but perhaps his greatest effect on our columns was one of refreshment. He had this effect because he was an artist and (to the end of his unexpectedly long life) a perpetually surprising person.

The artist enables people to see familiar things anew; and Morland had just this faculty. His angle of vision always seemed to be a little different; and, though this often embarrassed and sometimes alienated his acquaintances, it helped him to be not only an animating journalist but an exceptionally valuable member of our profession; for to look at things at a new angle is often highly instructive. He also had the catholic curiosity of the investigator and was ready to be thrilled by any fresh thought or fact—though he might lose interest as quickly. When he wanted to do so, he could absorb a body of knowledge very thoroughly, and he remembered a great deal about a great many diverse subjects, from mathematics to midwives, from infant feeding to the European flora; but he had little intellectual taste for generalisation, and tended to look at one thing at a time, "on its merits." Hence, as an artist, he preferred the small canvas to the large one; and he enjoyed painting detail. But whether the canvas was large or small, he would avoid monotony by an engaging touch of inconsequence in the composition.

If this is not the portrait of a creative thinker, it is nevertheless the portrait of a born journalist, born to make others think. Moreover, in this delicate and often exhausted man—the "old poitrinaire" as he called himself—the mental liveliness was matched and made profitable by an astonishing capacity for work, day in day out, year in year out. Skimming, as it seemed, through the millions of words that poured into the office, he could quickly detect what was new and interest-

ing, could discover what an unskilled author wished to say, and could put his finger on the fallacious. But to extract what is useful and present it acceptably, let alone excitingly, requires a labour that none will undertake without strong motive—in Morland's case often an obscure passion for what he called "the look of the page." This labour he gave without stint; for part of his editorial mission, as he saw it, was to get rid of fluff, waffle, and superabundant words generally, and to display what really mattered. On the other hand, he thought it at least as important to attract and keep the reader's attention; and though he took enormous pains in proof-reading and the verification of facts and references and quotations, he did not always find it easy to discipline his leaping skipping mind. Careful and accurate though he was, the artist would sometimes gain precedence over the scientist. "Better be wrong than dull," he would say, in rash reaction from the ponderous periods of conventional medical writing. And again, as scandalously: "the only way to think clearly is to be insufficiently informed!"

He early made himself a master of editorial technique, including the art of illustration, for which he had an eye. As a writer, too, he gained much from editing, throughout its whole existence from 1917 to 1934, an admirable little journal *Maternity and Child Welfare;* for the doctor can have no better training in simple exposition than to address himself to the non-medical. But journalism is not the same as literature, and Morland's writing was an instrument rather than an end in itself. He was not a journalist because he had to write: he had to write because he was a journalist. He liked words and could use them cleverly; but, as he paid more attention to the vivid phrase than to its literary setting, his articles were more stimulating than smooth. Never having written for the sake of writing, he remained a better judge of other people's work than of his own. If he was incapable of saying anything flat or commonplace, there were days, especially in his later years, when an embarrassed junior would have to point out that the less active reader ("such as myself") might not have strength to jump with him from thought to thought, from one symbolic *Aussichtspunkt* to another; and also, with all due respect, was that sentence grammatical? The man makes the style, and Morland, in his darting way, was perfect on a postcard, or on the edge of some office document. "I care not who writes the Leaders," said he in paraphrase, "so I may write the Notices."

Here then was the antithesis of the editor with a Message, who browbeats his readers in a weekly sermon. Morland believed that an editor's influence depends not so much on what he says as on his selection of news and on the space he gives to particular subjects. This fitted in nicely with his temperamental unwillingness to be bound by general rules. Instead of one message, he had innumerable messages to deliver, and he did not much care whether they agreed with one another. Consistency in the detailed style and printing of the journal? Yes, most certainly. But consistency in editorial utterances? A "*Lancet* policy" to be steadily pursued? That did not appeal to him. So far from being the doctrinaire that some supposed him, he seemed an editorial opportunist. He hated commitments of any kind, and would have liked to start each week's issue quite afresh, picking out only what was topical. But of course this process was never so erratic as it sounds; for what continued to interest Morland was what he thought important; and here he usually kept a step or two ahead of his times. Though a keen clinician, he had a preventive outlook, and in devoting much space to what is now called social medicine he renewed in some respects the reformist trend with which *The Lancet* started in 1823. "I don't know anything," he remarked, "to equal the happiness that reform produces—in the reformer."

Idealist and cynic in the same breath, he defied labelling. He was a pacifist but he believed in conscription. He was a sincere Friend, with a deep sense of Christian values, and at home he used the old Quaker *thee* and *thou;* but his "appearance of otherworldliness was . . . utterly deceptive—as many have found to their surprise" (as the editor of the *Spectator* put it). He had a penetrating intelligence but often preferred to deceive himself: "there are surely worse things than wishful thinking," he wrote, "and one of them is thinking the worst and so avoiding disappointment." He had a good deal of intellectual pride, but it was more than balanced by his humility. He wore old-fashioned clothes but was among the first to make the wireless part of his domestic life. All these contradictions, and their witty expression, made him a fascinating companion and chief; but they were apt to scare and exasperate people who did not know him well—and some indeed who did. He was not, in general, a good mixer: in avoiding the banal, his opening remarks were often bizarre; and out of shyness he would fall silent, with blank and fallen face, apparently pondering the folly of one's last remark. But with all this he was greatly interested in people and their affairs, generous in helping them, and strong in affection, which he longed to have returned. "There is no difficulty in *being* nice," he once said; "the difficulty is to *appear* nice." With his wife and three adopted children he had a hospitable home, first at Gerrard's Cross and later in St. John's Wood. If everyone was a little wary of him, never knowing what he would say next, he none the less had many good and lasting friends, especially in the tuberculosis world, in public health, and in the group of Pilgrim Surgeons with whom he often travelled abroad.

Though they later came to value him for his own sake, the Pilgrims' original idea was that Morland should be their interpreter; but they soon learned better. Linguist though he was, routine translation was hardly his metier. With his customary endearing frankness, he once confessed that some reminiscences of his were "hopelessly tendentious. I don't think I have ever been able to describe honestly what I see or accurately what I hear." But he was something far better than a representational draughtsman: from some peculiar vantage-point nearer the floor or up on the ceiling, he made well-known objects and subjects look somehow strange, and usually more gay. This obliquity of vision, of which he was often unconscious, had its disadvantages, especially in personal relations; but it was the gift that enabled him to pick up an article, read between or beyond its lines, and give it the revealing title or the concluding twist that provokes thought. Which is a rare gift, amounting in Morland to something near genius.

From early days he bore a large share of the burden of office routine, and in the conflict between home and office it was his home that suffered. Each had its troubles, and at *The Lancet* the stress was enhanced by the singular contrast between Sprigge the editor and Morland his deputy. At the central table sat Sir Squire, small, urbane, aquiline, in black coat and striped trousers; a cultivated man of his world; beloved but irascible. Behind a vast mahogany desk was Morland, tall, solemn, gaunt, with noble brow, in a grey tweed morning coat like a coachman's; surer of his worth than his welcome; overworked and often maddening. That with all its friction this partnership persisted did credit to both men; and in collaboration they were a strong pair—Sprigge preserving continuity and good sense while Morland gave the paper life. With Mrs. Kettle as a dynamic third, they made *The Lancet* more than worthy of its past.

Morland, when he wanted, could write so catalytic a letter as to draw a contribution from the most unreactive of experts; and even his routine communications were carefully written in a personal way—often in fact by hand. But it cannot be said that even through the post he wholly satisfied everybody; for ordinary people often prefer ordinary letters, and few besides harassed editors know how correspondence may improve if allowed to "mature." Those who went to *The Lancet* oracle with a question must be prepared for an oracular reply, which left the "onus" (to use another of Morland's favourite words) on the person receiving it. The following, for example, is his answer to a long letter from a doctor who wanted to know about the copyright regulations governing the reproduction of *Lancet* material in foreign broadcasts:

Dear L.,

I am glad to hear you are helping the British Council to let South Americans know what British medicine is doing. We do our own bit too. I don't feel I can give you any general guidance on copyright in the air. But you would find the Golden Rule applicable and between ourselves the Hippocratic Oath is binding.

With kind regards, Sincerely Yours,

EGBERT MORLAND.

Copyright was one of the subjects that did not interest him.

Even his colleagues seldom had their questions answered directly or comprehensively. But when his mental processes seemed to be at their most devious and detached the probable reason was that he was not yet ready with his decision, which he would give in his own time and his own way. It was partly because he was so puzzling that he was so fine a teacher; and, whether amusing or infuriating, his enigmatic instructions somehow extracted from his juniors the same kind of effort that he himself put into *The Lancet*.

Nor did this taste for the oracular prevent his being energetically practical in other fields when something within his compass needed to be done. Hence in his spare time (which did not exist) he did solid work in many useful causes; and in various ways he was of service to the Queen Alexandra Sanatorium at Davos, to the Enham (now Enham-Alamein) Village Centre for Disabled Ex-Servicemen, to the Medical Defence Union, to the Society for the Relief of Widows and Orphans of Medical Men, and to Sibford School, of which he was a governor. But, though a good speaker, he seldom appeared on platforms or at the meetings or dinners of medical societies. Disliking public occasions, he was inclined to think that an editor should be a back-room boy, neither seen nor heard except through his journal, and invisible especially to callers. None the less he was a sociable person, and never more happy perhaps than in the Athenaeum, which likes a proportion of its members to have their eccentricities. He was happy, too, in the fellowships conferred on him by the Royal College of Surgeons in 1936 and the Royal College of Physicians in 1941; though both colleges probably wanted to withdraw their honours when they saw that he described himself (whether to save space or out of modesty) as FRCP&S.

When Morland succeeded to the editorship in 1937 he was already 62; and two years later, when war broke out and the decision was reached to move the journal out of London, he was tempted to resign his sisyphean task. But, as it turned out, the move to Aylesbury proved a tonic. Settled cosily in a flat above the tiny office in Temple Street, he abandoned even the convention of office hours and did most of his downstairs work after supper when his juniors had gone home. Freed from the social obligations of his chair, and disguised from former friends by a beard and a dilapidated mackintosh, he took an eager interest in the war-time life of the small market town, and spent more of his time in reflection and reading—though even now he never finished a book, preferring the random sample. With a senior's lessening of inhibitions, he was finding it easier to show his abundant kindness of heart and concern for others; but to keep the balance he showed also more of the sharpness of his tongue. When directed towards groups rather than individuals, this asperity was generally enjoyed, and it is pleasant to find in our files his deflating comment on a rather pompous declaration in which distinguished signatories defended the rights and freedom of the citizen. Underneath, in his small, neat, decorative hand, Morland has written:

"I'd rather be in prison with my friends than free with the Pots. Ed. L."

It was sad, in a way, that he should not take command of his journal until his most active years were past; for he never got full credit for his achievements, and these were different from what they might otherwise have been. But possibly *The Lancet* did not lose thereby; for in his more impetuous moments he often needed someone to tell him to think again. Moreover, though he could rule both by love and by fear, he was not a born commander: he was a prophet or priest rather than a king—an impish prophet but in direct line from the Old Testament. During the war he was already an old man, with the defects of his high qualities becoming more apparent, and it was inevitable that in his court at Aylesbury the executive responsibility should devolve more and more on his lieutenants—as once it had devolved from Sprigge to him. So the honourable burden was partly transferred to younger shoulders, and when *The Lancet* returned in 1944 to London Morland retired into private life—with a characteristic valedictory greeting to his readers.

At first at Aylesbury, and afterwards in an old stone house beside the ancient Friends' meeting-house at Wooldale in Yorkshire, he adjusted himself yet again to new circumstances. He had given much thought to old age—its disabilities and possibilities—and had indeed been one of the first to see the need for a concerted movement for old people's welfare, comparable and complementary to the movement for infant welfare which developed during and after the previous world war. In 1945 he expressed his ideas in a charmingly Morlandish pamphlet called *Putting Them on the Map*, written for a Buckinghamshire committee of which he was instigating member. "We must search out the old people in their hidey-holes," he said, "and find for ourselves whether they are content with their lot, whether it is a lot with which they should be content, and if not what we should do to amend it." Himself, he well understood the wisdom of continuing to be active, and as lately as 1951 he wrote the biography of a pioneer midwife, entitled *Alice and the Stork*. He had the advantage of being one of those whose pleasures are of the mind, and for some years of his retirement he was also fortunate in his keen enjoyment of gardening and walking, and in the companionship of his wife. But each in turn was taken from him, and eventually almost all the power of sight. By the refinement of age, and its distresses, his face became less that of a prophet than a saint—a rôle to which he had never aspired. One of his chief hopes, he said, was that he might continue to amuse those around him.

He died at York on April 26, in his 81st year; and even to the last his mind, though wayward, retained the ardent quality that so often made him seem the youngest, though maybe also the oldest, of his company. Throughout his life he belonged to the present and the future rather than the past; and many who knew him, as well as many who did not, have cause to be grateful for his disturbing, enlivening, and enlightening spirit.

WILLIAM BURRIDGE
D.M. Oxfd

Dr. William Burridge, formerly professor of physiology and principal of the King George's Medical College and dean of the faculty of medicine at Lucknow University, died in hospital at Dartford, Kent, on April 21, at the age of 69. He was the author of *Excitability, a Cardiac Study* (1932), *A New Physiology of Sensation* (1932), *A New Physiological Psychology* (1933), and many short articles in various journals.

W. T. B. writes: "Like his fellow Cornishman Humphry Davy, and his pupil Faraday, Dr. Burridge made important discoveries through brilliantly original experiments using very cheap and simple apparatus. His book *Excitability* describing his experiments on the frog's heart is a medical classic, and this study of the beating heart's responses to stimulation enabled him to correlate similarities in nervous action and conscious sensation, to deduce rhythmical activity in brain and spinal cord neurones and in sensory end-organs, and to elaborate many logical consequences of assuming rhythm in neurones. The fact of rhythm in cerebral neurones has since been independently confirmed by other workers; some of his predictions remain to be proved by experiment.

"So far Dr. Burridge's work has not received the general acclaim it deserves. We owe to him the new and revolutionary concept of responsiveness as distinct from excitability; a new method of research in pharmacology, giving new and surprising information on the multiple actions of some drugs and their quite different effects in large and small doses; and a new physiological psychology, harmonising experiment, sensuous experience and deductive reason, and well in advance of any previous theory of sensation and of thinking process.

"His own explanation of the opposition that his work and theories met was the power of an orthodox primary assumption to blind fully organised minds to any new truth that contradicted teaching elaborated from the primary falsely generalised preconception. His Puck among the Doctors (*Medicus*, December, 1952) gives a full statement of his defence and repays reading."

PATRICK KERR DIXON
M.D. Dubl., F.R.C.S.I.

Dr. Patrick Dixon, who died on April 21 at Lusaka, Northern Rhodesia, had spent nearly thirty strenuous and adventurous years as a medical missionary in the Belgian Congo.

He was born in 1898, the son of the late Andrew Dixon, professor of anatomy and dean of the school of physic at Trinity College, Dublin. Patrick's studies at Trinity College were interrupted by the 1914–18 war, and he was mentioned in despatches for services with the Royal Garrison Artillery in France. In 1918 he returned to Dublin to graduate in 1922 in science, with first-class honours in mathematics and experimental science. Two years later he graduated M.B. with honours.

In 1926 he joined the Garenganze Evangelical Mission in the Belgian Congo.

For the next twenty-five years, despite the effects of severe injuries sustained when he was mauled by a lion, he served the people of the Luapula Valley with devotion. In the course of his work he saw the suffering caused by trachoma, and in 1929 he visited India to study this disease under Sir Henry Holland. His published work deals with his experience of its treatment in Central Africa. The hospital which he founded at Chibambo became a centre for the treatment of eye diseases. In recognition of his services he was decorated by the King of the Belgians.

In 1952 ill health forced him to leave the Luapula Valley, and for a time he was medical officer at Nkana Mine. In 1953 he joined the staff of the Government African Hospital at Lusaka. He also taught at the African Medical School.

A colleague writes: "Pat Dixon was an eager, tireless, and devoted worker, content to make do with the most meagre equipment, yet keeping himself up to date in the medical world and always looking forward. In this he was a true disciple of the great Dr. Livingstone, who had roamed the same country fifty years before. Like him too, Dixon bore to his dying day the marks of the lion's crunch in his left humerus. He will long be remembered on the divide between Congo and the Zambezi watersheds."

His first wife, Miss Olive Arthur, died in 1927. In 1934 he married Miss I. H. Russell who survives him with a daughter of his second marriage.

KENNETH BENSON BELLWOOD
O.B.E., B.A., M.B. Camb., F.R.C.S.

Dr. Bellwood, consultant surgeon to the ear, nose, and throat department of Bedford General Hospital, died at his home on April 17 at the age of 64.

He was born in Middlesbrough and was educated at Coatham School, Redcar. He was a scholar of Pembroke College, Cambridge, where he took the natural sciences tripos in 1912, and a Shuter scholar at St. Bartholomew's Hospital, qualifying in 1914. During the 1914–18 war he was appointed O.B.E. for outstanding service in the Royal Navy. In 1917 he took his M.B. Soon after he returned to civilian work he entered general practice in partnership with the late W. H. Miller in Bedford and also specialised in diseases of the ear, nose, and throat. In 1921 he obtained the F.R.C.S. When, in 1930, he was appointed E.N.T. surgeon to the Bedford County Hospital he laid the foundation of the present successful, large, and busy E.N.T. department at the Bedford General Hospital. Despite ill health which first showed itself in 1940, he worked indefatigably, and he was appointed consultant surgeon to the department when the hospital was taken over by the National Health Service in 1948.

G. A. M. writes: "Dr. Bellwood, as he is called by all in Bedford, was loved for his quiet modesty and great kindness to all his patients. The greatest sorrow will be felt by the patients he looked after as a general practitioner. He loved the hills, and was a great walker in his day. Even when he could no longer climb he always went north to his beloved Yorkshire for his holidays."

In 1921 Dr. Bellwood married Florence Violet Cooper, who survives him with two daughters.

Appointments

BELCHER, J. R., M.S. Lond., F.R.C.S., M.R.C.P.: asst. thoracic surgeon, Middlesex Hospital, London.

DAWES, J. D. K., M.D. Durh., F.R.C.S.: asst. consultant surgeon, E.N.T. department, Royal Victoria Infirmary, Newcastle upon Tyne, and surgeon to the Newcastle upon Tyne R.H.B.

GRIFFITHS, E. P., M.R.C.S., D.OBST., D.C.H.: asst. M.O.H., Gloucestershire.

MATHER, J. F., M.B. Durh.: school M.O., Newcastle upon Tyne.

MILLS, W. G., M.B. Birm., F.R.C.S., M.R.C.O.G.: part-time consultant obstetrician and gynæcologist, mid-Worcestershire group, Birmingham R.H.B.

SKONE, J. F., M.D. Lond., D.C.H., D.P.H., D.I.H.: M.O.H., chief welfare officer, and principal school M.O., West Bromwich.

South-Western Regional Hospital Board:

LEAHY, T. C., M.B. N.U.I.: S.H.M.O., Hortham-Brentry hospital group, Bristol.

WALKER, W. L., M.B. Aberd., D.P.H., D.P.M.: medical superintendent, Hortham-Brentry hospital group.

WALLEY, R. V., M.B. Camb.: deputy resident physician, Ham Green Hospital, near Bristol.

Manchester Regional Hospital Board:

HOYLE, THELMA B., M.B. Manc., D.A.: asst. anæsthetist (S.H.M.O.), Burnley and district hospitals.

KIRBY, J. R., M.B. Leeds, D.M.R.D.: consultant radiologist, Wigan and Leigh hospitals.

O'REGAN, JOHN, M.B. N.U.I., D.P.H.: tuberculosis physician (S.H.M.O.), Preston and Chorley hospitals.

Liverpool Regional Hospital Board:

JONES, C. H., M.B. Lpool: whole-time asst. pathologist, Alder Hey Children's Hospital, Liverpool.

RICHARDSON, J. C., M.B. Lpool, F.F.A. R.C.S., D.A.: consultant anæsthetist, Liverpool city area.

WALKER, G. D., D.M. Oxfd, M.R.C.P.: consultant physician-superintendent, Newsham General Hospital, Liverpool.

WALLACE JONES, D. R., M.B. Lpool, D.M.R.D.: consultant radiologist, North Liverpool and Fazakerley groups.

The Hospital for Sick Children, Great Ormond Street, London:

BAILLIE, R. C., M.B. Lond.: house-surgeon, orthopædic and plastic departments.

JOHNSTON, W. H., M.D. Toronto: asst. medical registrar.

SMITH, ISABEL G., M.B. Lond., D.C.H.: house-physician.

TODD, I. P., M.D. Toronto, F.R.C.S., D.C.H.: part-time surgical registrar.

WYLLIE, G. G., M.B. Adelaide, F.R.C.S.: resident asst. surgeon.

East Anglian Regional Hospital Board:

CHEFFINS, E. M., M.B. Lond., M.R.C.P.I.: physician-superintendent, Papworth Hospital.

GILLIE, ALEXANDER, M.B. Glasg.: asst. psychiatrist, Little Plumstead mental-deficiency group of hospitals, and child-psychiatry service.

MARTIN, W. M., M.B.: anæsthetic registrar, Newmarket General Hospital.

WELLS, J. M. WESTON, M.R.C.S., D.M.R.D.: consultant radiologist, King's Lynn and Wisbech area.

Notes and News

HEALTH EDUCATION

AT the seminar for public-health workers organised by the Central Council for Health Education of Great Britain and held in London from April 19 to 23, delegates attended from 21 countries. Dr. W. Emrys Davies, education officer to the council, said that people do not listen to instruction unless they feel that the subject matter is relevant to their own problems and way of life. Hence the first task of the health educator is to assess the basic human needs common to all, in any country, whatever the conditions or climate. The second is to establish an atmosphere in which discussion can flourish; and experiments have shown that the discussion group can achieve what its members could not achieve singly. The group leader is therefore a more effective person than the lecturer talking to an audience and isolated from his hearers by natural barriers of platform position, shyness, and absence of communication of ideas between members of the audience. Dr. John Burton, medical director of the council, described the use of case-histories which command interest from members of a group and which recall to many experiences that can be used as a basis for discussion. Mr. W. Sellers, film adviser to the Colonial Office, said that in dealing with illiterate people one must evolve three-dimensional visual aids which come within the range of their everyday experience. Diseases have to be classified in relation to their causes and source—e.g., insect infections, airborne and water-borne diseases. In Nigeria a film van has proved a big attraction because people will comprehend a moving picture when the still one makes no impression.

UNDERGRADUATE TEACHING IN LONDON

THE difficulties of undergraduate teaching hospitals arising from the shift of population from the centre of London are mentioned by Colonel J. J. Astor, chairman of the board of governors of the Middlesex Hospital, in the hospital's statistical report for 1954. At the Middlesex the bed-occupancy rate is over 90%, and the pressure on the outpatient department is as great as ever; but "there is a tendency for clinics and wards to be deprived of various types of case which are valuable for undergraduate teaching. Patients suffering from these conditions are now for the most part being treated at hospitals in the peripheral areas, and in consequence medical students of today are not seeing the cross-section of illnesses which was available for their predecessors when this was still a residential area." As an interim measure the Middlesex has arranged with the Luton and Dunstable Hospital for some of the patients on that hospital's waiting-list, with their consent, to be transferred to the Middlesex for treatment; and this scheme is working well.

"THREE MEN"[1]

Miss Jean Evans, a writer who has turned her talent to presenting the case-histories of three living men, describes her book in a sub-title as "an experiment in the biography of emotion." Johnny Rocco began life as a rejected child who was often delinquent, but who has finally made a precarious social adjustment. William Miller, too, was often delinquent till he became blind; he recovered his sight but (perhaps finding the responsibilities of sight too heavy) became delinquent—and blind—again. Martin Beardson is a tormented homosexual. She tells their stories with sympathetic insight, but without interpreting the psychological mechanisms at work. It was inevitable that she should select, from the vast quantity of material she has amassed in the course of her long and friendly association with these men, which facts and which letters and conversations to report; but she has a biographer's skill in choosing what is relevant, and the reader is confidently aware that the picture is true, distorted neither by compassion nor censure. Prof. G. W. Allport, professor of psychology in Harvard University, notes in an introduction how valuable he has found the book in the teaching of students. Because Miss Evans has avoided imposing her own interpretations, students are stirred to ask questions, and hence to discover much about some common forms of mental sickness. "The first requirement in good teaching," as Professor Allport says, "is to excite greedy curiosity." These cases, he finds, do exactly that.

1. London: Victor Gollancz. 1954. Pp. 297. 15s.

University of Liverpool

At a recent examination for the diploma in tropical medicine and hygiene the following were successful:

P. B. Acharya, A. A. Akiwumi, S. H. Bokhari, E. J. Goold, M. A. Jafri, Prakong Kecharanantana, N. H. Khan, T. J. Malherbe, J. I. Maxwell, H. Medina, P. A. Y. Narayanan, Margaret C. Newmark, Bridget O'Keeffe, A. V. Rao, J. B. Roy, G. Singh, S. Suksangium.

Dr. J. B. Roy has been awarded the Milne medal in tropical medicine, and Dr. J. I. Maxwell the Warrington Yorke medal in tropical hygiene.

Royal College of Physicians of London

At a comitia held on April 28, with Sir Russell Brain, the president, in the chair, the following were elected to the fellowship:

J. F. LANDRETH, Christchurch, New Zealand; J. L. FRANKLIN, London; J. H. HALLIDAY, Sydney; R. I. MACDONALD, Toronto; F. E. PILKINGTON, South Brent, Devon; R. L. WATERFIELD, London; A. C. STEVENSON, Belfast; H. A. TREBLE, Canterbury; J. C. RICHARDSON, Toronto; J. F. LOUTIT, Harwell; T. H. BOON, Newcastle upon Tyne; R. B. KERR, Vancouver; R. N. TATTERSALL, Leeds; A. C. DORNHORST, London; W. S. SUTTON, Liverpool; B. G. PARSONS-SMITH, London; F. H. SCADDING, London; A. D. LEIGH, London; H. V. MORGAN, Khartoum; L. D. W. SCOTT, Glasgow; D. A. WILLIAMS, Cardiff; C. F. HAWKINS, Birmingham; R. D. TONKIN, London; H. P. WILLIAMS, Coventry; A. W. WILLIAMS, Kampala; J. R. ELLIS, London; R. A. JONES, Isleham, Cambs; E. K. CRUICKSHANK, St. Andrew, Jamaica; GEORGE MACDONALD, London; B. G. MAEGRAITH, Liverpool; W. A. E. KARUNARATNE, Colombo.

The following were elected to the fellowship under by-law 39b, which provides for the election of non-members "who have distinguished themselves in any branch of the service or practice of medicine":

I. DE B. DALY, F.R.S., Cambridge; K. G. V. NYLIN, Stockholm; W. G. PENFIELD, O.M., F.R.S., Montreal; G. F. STRONG, Vancouver.

The following, having satisfied the censors' board, were elected to the membership:

J. H. Allison, M.B. Lond., squadron-leader, R.A.F., J. B. Barlow, M.B. Witwatersrand, G. P. Blanshard, M.D. Camb., C. R. Boughton, M.B. Sydney, J. A. S. Brine, M.B. Melb., F. I. Caird, B.M. Oxfd, A. S. Cooper, M.B. Camb., J. E. Cosnett, M.B. Witwatersrand, A. J. P. Crowden, M.B. Lond., J. A. Davis, M.B. Lond., J. B. Dossetor, B.M. Oxfd, F. E. Dreifuss, M.B. N.Z., M. de L. Faunce, M.B. Adelaide, Judith M. Fitzsimons, M.B. Camb., Peter Fleischl, M.B. N.Z., A. D. Forrest, M.B. St. And., T. C. Gibson, M.B. Camb., M. P. W. Godfrey, M.B. Lond., K. L. Granville-Grossman, M.B. Lond., Robert Hecker, M.B. Adelaide, Anthony Hordern, M.B. Edin., Bernard Lennox, M.D. Durh., G. D. Lumb, M.D. Lond., J. B. McFadden, M.B. Sydney, D. C. Morrell, M.B. Lond., flight-lieutenant, R.A.F., A. E. Mourant, D.M. Oxfd, C. G. H. Newman, M.B. Lond., I. J. Pinto, M.D. Bombay, D. E. B. Powell, M.B. Edin., surgeon lieutenant, R.N.V.R., F. L. Richardson, M.B. Birm., R. H. C. Rischbieth, M.B. Adelaide, Daniel Rooney, M.B. Belf., J. A. Rundle, L.R.C.P., P. D. Saville, M.D. Lond., Eric Schiller, M.B. Sydney, D. J. Sheehan, M.D. Lond., wing-commander, R.A.F., W. D. Smith, M.B. Glasg., Eileen M. Spence, M.B. Aberd., V. H. Springett, M.D. Lond., Bernard Tabatznik, M.B. Witwatersrand, E. J. Watson-Williams, M.B. Camb., Wickrama Wijenaike, M.B. Ceylon.

Licences to practise were conferred upon the following 125 candidates who have passed the final examination of the conjoint board:

Nazir Ahmed, B. G. Andrews, Martine Y. K. Armstrong, M. J. Aylett, B. J. Bartley, Esther A. Bence, A. E. Blumenfeld, T. L. Bowen, T. A. Boxall, G. E. Brennan, D. E. Brooke, B. J. Brooks, J. D. Broome, E. H. Burgess, Brenda J. Butcher, P. R. Butler, P. H. Byles, H. C. I. Bywater, D. A. O. Cairns, J. J. Camp, Gillian M. Cann, Elizabeth A. Capell, J. A. Chappel, Mary D. Clarke, B. J. Clayton Payne, Terry Coates, J. A. B. Crawford, E. A. P. Croydon, D. E. Dart, H. T. Davies, K. S. Davies, D. T. F. Deakin, E. R. Dingley, Patricia A. Dinkel, Elaine C. Donoghue, Denise J. Duchesne, Sheila M. Eades, P. M. Elwin, Verna P. Firth, J. D. W. Fisher, C. B. Floyd, B. H. Fookes, C. B. Franklin, A. G. Giddins, D. J. Gooding, B. G. H. Grant, H. C. Grocott, Beryl M. L. Hall, R. C. Hamber, C. N. Haynes, Rita Henryk Gutt, Molly Hill, P. R. Holt, Judith C. Howard, P. J. C. Howe, J. G. J. Howell, Elizabeth A. Hudson, Rosalinde Hurley, R. H. Huzzey, D. E. Hyams, Caroline M. Jones, N. L. Jones, N. H. Kemp, D. A. Kennard, A. G. Kirk, Yuin B. Ling, Evelyn C. Lock, J. A. London, B. H. McCombe, B. B. MacGillivray, T. A. R. Mahmoud, Barbara L. Marston, Royston Mason, J. S. B. Meyer, Marion V. Miles, J. D. Miller, S. F. W. Monkman, W. P. N. Moore, J. G. Morris, A. I. Munro, M. W. N. Nicholls, W. B. Obank, F. A. Orhewere, Dolly I. Pakshong, Giuseppe Pampiglione, J. G. Parkes, G. W. Peacock, G. D. Pegrum, G. B. Phillips, T. A. Plumley, G. G. Pollock, C. A. Poulter, C. A. McI. Procope, M. J. Prophet, Elisabeth J. Rashid, Victor Ratner, Avril E. Reed, G. R. E. Roberts, J. T. Roberts, Bruce Robertson, Doreen Rothman, Theodore Rowan, N. E. Rust, M. L. Rutter, D. E. Saunders, G. W. Scott, Joanna Sheldon, B. S. Smith, David Staig, Barbara Y. Stockhausen, J. M. Straiton, Rhona Stringer, Malcolm Swann, D. M. Symes, Lionel Tenby, Ping-Kun Teng, D. K. M. Thomas, T. J. Tiplady, P. J. Toghill, Chai-Hee Tsao, I. O. K. Udeozo, Roger Unwin, Molly E. Wakely, Kenneth Wilderspin, M. T. C. Wright.

The following diplomas and those mentioned in our issue of April 30 (p. 927) were conferred jointly with the Royal College of Surgeons:

D.C.H.—L. T. Champness.
D.I.H.—Ziauddin Khan.
D.P.H.—I. H. Seppelt.

Royal College of Obstetricians and Gynæcologists

The following were successful in a recent examination for the diploma in obstetrics:

Jessamine M. Akhurst, James Alexander, H. C. Allen, Anne J. Anderson, M. J. Barnard, C. T. H. Barrett, Renuka Basu, A. G. Blyth, J. G. Blyth, Beryl M. Bromham, J. W. Brown, Jane Buchanan, C. D. Campbell, Margaret E. Chitty, A. P. Chrispin, Elinor B. Clark, Priscilla A. Clark-Maxwell, J. S. Clayton, Elinor M. Cleland, W. M. D. Clements, Mary Clothier, W. G. Cooke, R. L. Coppock, D. C. Cornish, Florence M. Cousley, P. H. Crosskey, Lois R. Davidson, D. W. Davis, D. A. De Renzy-Martin, G. W. Donaldson, D. M. du Toit, C. E. Elliott, Constance H. Ellis, Lucy M. Ellis, E. W. Evans, Joan M. Evans, J. R. Eve, H. T. Fay, Helena M. Fehily, Graham Findlay, Kathleen T. Flanagan, J. McC. Forrester, R. W. Galloway, W. F. P. Gammie, R. E. M. Geldart, J. A. Gibson, R. M. Goddard, H. R. Gompertz, J. R. Gough, Sheila M. Gough, J. L. Graham, F. V. Griffiths, A. B. Guest, A. T. G. Gunn, E. A. Haddock, H. N. Hardy, Adeline K. H. Heah, John Heffernan, R. M. Hodges, W. S. Hossack, D. S. Iles, Katherine I. Jack, Elizabeth M. Jennings, A. H. John, Isabel D. Johnson, Vivian K. Jones, A. R. Jordan, Kevin Kelly, A. S. L. Kennedy, Esther S. Kerr, Bernard Kirsch, William Lang, L. A. Lees, C. S. Leithead, H. C. Leslie, E. R. Lester, N. H. Logan, Peter Los, R. H. Mackay, B. N. McAdam, Kathleen M. McCartie, Doreen E. McConnell, W. E. H. Maeckelberghe, J. M. Manners, Muriel J. Martin, J. F. A. Maskell, H. McI. Morgan, Eleanor Morrison, Mary J. Mossman, K. A. Naylor, Margaret A. Norman, Jean M. North, J. W. Parkin, Rena E. Partridge, W. F. Paveley, J. A. Payne, Mary Phillips, H. R. Playfair, T. A. Plumley, J. G. Powell, Elizabeth M. Price, M. N. Prichard, Margaret J. Purser, Olga M. Rampersaud, Amla R. Rao, A. M. Reader, D. M. Reader, E. G. Rees, H. F. Reichenfeld, Rosalind M. Rewcastle, D. P. W. Roberts, Margaret J. L. Robinson, R. S. B. Rogers, J. N. Roper, A. D. Rowlands, Hilary M. Rowson, Margaret C. Russell, Dorothy Sanderson, T. A. Sanderson, Kenneth Scott, R. W. Scott, Jane M. Scott-Brown, Jean M. Shields, M. J. Sill, H. R. Simpson, W. S. Sinton, G. H. Smerdon, R. T. Smith, J. H. Spurway, R. M. Stanford, Hilary K. R. Steen, Phyllis A. Stevens, Audrey B. Stevenson, Dan Stewart, James Stewart, T. F. Stoyle, Heather B. Thompson, John Thompson, David Tingle, Annemarie D. Tupper, Jack Walker, Patricia G. Wallis, W. W. Watson, J. W. S. Webb, J. R. Welsh, B. F. Whiteley, Sheila Wightman, Gladys M. H. Williams, J. R. Wood, W. J. Wright, W. O. C. Young.

Institute of Cardiology, London

Dr. Lawson McDonald has been appointed assistant director of the institute.

Dr. McDonald, who is a graduate of the University of Cambridge, qualified from the Middlesex Hospital, London, in 1942. After holding house-appointments there he served in the R.N.V.R. from 1943 to 1946. From 1946 to 1948 he held various appointments at the National Heart Hospital and the Institute of Cardiology. In 1948 he returned to the Middlesex Hospital as medical registrar, and in 1949 took the M.R.C.P. Later he was appointed assistant to the professor of medicine at the Middlesex Hospital, and visited Stockholm in connection with research into peripheral vascular disorders. He graduated M.D. in 1952. He was awarded a Rockefeller travelling fellowship for 1952–53, and during its tenure he worked in Boston. His publications include papers on peripheral vascular disease, ischæmic heart-disease, and mitral-valve disease with special reference to the pulmonary circulation and to surgery of the mitral valve.

Commonwealth Health and Tuberculosis Conference

Mr. Iain Macleod, the Minister of Health, will open this conference at the Royal Festival Hall, London, on June 21. Other speakers will include Dr. Johannes Holm (W.H.O.), Dr. P. V. Benjamin (India), Prof. Etienne Bernard (France), Dr. Walsh McDermott (U.S.A.), Dr. E. Ross (Canada), Dr. H. G. Trimble (U.S.A.), Prof. Arvid Wallgren (Sweden), Sir Geoffrey Marshall, Dr. George Day, and Dr. Honor Smith. Further particulars may be had from the National Association for the Prevention of Tuberculosis, Tavistock House North, London, W.C.1.

Review of Byssinosis Benefit

The Minister of Pensions and National Insurance has asked the Industrial Injuries Advisory Council to review the provision made for byssinosis under the National Insurance (Industrial Injuries) Acts. This review is being undertaken for the council by their industrial diseases subcommittee. The chairman of the subcommittee is Sir Arnold Plant and the members include Prof. R. E. Lane, F.R.C.P.

Regulations, made under the Industrial Injuries Acts, at present provide insurance cover against the disease for people who have been employed at some time since July 5, 1948, and for at least twenty years in all, "in any occupation in any room where any process up to and including the carding process is performed in factories in which the spinning or manipulation of raw or waste cotton is carried on." Benefit is not, however, available unless the person concerned has died from byssinosis or his disablement from the disease is assessed at not less than 50% and is likely to be permanent. These conditions were imposed because of the difficulty of distinguishing byssinosis from bronchitis and emphysema of non-occupational origin.

Persons and organisations are invited to submit written evidence to the secretary of the council, 10, John Adam Street, London, W.C.2, not later than June 6.

Institute of Hospital Administrators

The annual conference of this institute will be held at Caxton Hall, Westminster, S.W.1, from May 12 to 14. The principal subject chosen for discussion is Group Administration.

British Association of Physical Medicine

At a meeting held on April 23, the following officers were elected for 1955–56:

President, Lord Horder; vice-president, Dr. W. S. Tegner; hon. treasurer, Dr. A. C. Boyle; hon. secretary, Dr. G. O. Storey; hon. editor, Dr. H. A. Burt.

The Medical Sickness Society

On April 26 a reception was held by the Medical Sickness, Annuity, and Life Assurance Society Ltd. to mark the opening of their new offices at 3, Cavendish Square, London, W.1. The guests were received by the chairman, Mr. R. McNeill Love.

Royal Statistical Society

Study Circle on Medical Statistics.—The annual general meeting of this circle will be held on Tuesday, May 31, at 5.45 P.M., at the Westminster Medical School, Horseferry Road, S.W.1. Afterwards Dr. P. Armitage, Dr. John Knowelden, and Dr. R. F. Wrighton will read short papers on Controlled Trials in Medical Research.

Shortage of Dentists

The Interdepartmental committee, under the chairmanship of Sir Arnold McNair, which has been set up by the Minister of Health and the Secretary of State for Scotland to ascertain the reasons for the lack of candidates for training as dentists, has held its first meeting and is ready to receive evidence. Persons or organisations wishing to give evidence should, in the first instance, communicate in writing with the secretary of the committee, Mr. T. C. L. Nicole, at the Ministry of Health, Savile Row, London, W.1.

Food Hygiene Advisory Council

On May 2 Mr. Heathcoat Amory, the Minister of Agriculture, Fisheries, and Food, announced that 11 members of this council are to represent the public, 3 the trades, and 3 the workers in the trades. Lord Strong is to be chairman, and other members include Mr. S. W. Barnes, secretary to the governors of King's College Hospital, Sir Harry Sinderson, F.R.C.P.E., director for Sussex of the St. John Ambulance Association, and Mrs. James Tweed, chairman of the house committee of St. James's Hospital, Balham.

Dr. Stott Commemoration Fund

This fund has been started as a tribute to the work of Dr. L. B. Stott who, until his retirement owing to ill health last December, spent 33 years as medical officer at Papworth Village Settlement. In view of his interest in children it is proposed to use the fund for prizes or grants for children at Papworth Village or school and/or a shelter in their playing-field.

Contributions should be sent to F. E. Redman, secretary of the fund, St. Peter's Hostel, Papworth Everard, Cambridge.

Hæmophilia Society

The annual general meeting of this society on April 24 was attended by 60 members and a number of doctors interested in hæmophilia. Sir Lionel Whitby, F.R.C.P., was re-elected president, and Dr. R. G. Macfarlane was invited to become a vice-president. Reports on the work of groups in the South of Scotland, Manchester, Newcastle, Sussex, and Middlesex were received. During the past year the society had sponsored the formation of similar societies in Australia, France, Holland, and Switzerland. Its address is 94, Southwark Bridge Road, London, S.E.1.

Hospitals in Eire

The second of three sanatoria, which the government of Eire is building, was opened at Blanchardstown, co. Dublin, by Mr. T. F. O'Higgins, the minister of health, on April 22. The west regional sanatorium, at Merlin Park, Galway, was opened in 1952, and the southern regional sanatorium will be opened next month. The hospital at Blanchardstown will be known as the James Connolly Memorial Regional Sanatorium. It has cost £1$^{3}/_{4}$ million, and it will accommodate 520 patients.

It is laid out in seven 40-bed pulmonary blocks, a 40-bed isolation and infective children's block, four 30-bed non-pulmonary blocks (including orthopædic), and a three-storey hospital and treatment centre, with operating-theatres, and X-ray and physiotherapy departments, with 80 beds. The group of buildings on the 240-acre site also includes a nurses' home for 100 nurses, and houses and flats for the medical staff.

International Society of Criminology

The third congress of this society will be held at Bedford College, London, from Sept. 12 to 18, under the presidency of Dr. Denis Carroll. Further details may be had from the organising secretary, Mr. H. O. Cox, 28, Weymouth Street, W.1.

Indian Medical Services Dinner Club

The annual dinner of this club will be held at the East India and Sports Club Ltd., St. James's Square, London, S.W.1, on Friday, June 10, at 7.30 P.M. Tickets may be had from the secretary of the club, Medical Board Room, Commonwealth Relations Office, Matthew Parker Street, S.W.1.

Food Microbiology and Public Health

During its summer conference and annual meeting in Cambridge the Society for Applied Bacteriology will hold a symposium on this subject on July 4 and 5. This is open to non-members, and further particulars may be had from Mr. G. Sykes, the hon. secretary, Boots Pure Drug Co., Ltd., Microbiology Division, Nottingham.

Kashmir Medical Congress

Arrangements are being made for a party from this country to attend a medical congress in Kashmir next November. The approximate cost of £298 per person will include return air fare from London and travelling and living expenses in India. Further details may be had from Dr. R. U. Hingorani, 128, Harley Street, London, W.1.

International Association of Gerontology

The fourth congress of this association will be held in Italy early in September, 1957.

Vitamin E Congress

This international congress will be held in Venice from Sept. 5 to 8 at the Cini Foundation on the Island of San Giorgio Maggiore. Further details may be had from the secretary, Prof. Emilio Raverdino, Via Pietro Verri 4, Milan.

National Insurance Benefits Abroad

People otherwise entitled to National Insurance retirement pensions, widows' benefits, or guardian's allowance will be able to draw their benefit in any country in the world if draft regulations submitted to the National Insurance Advisory Committee are approved. At present these benefits can be paid to people resident abroad only if they are living in the Commonwealth or in the Republic of Ireland.

The British Standards Institution have published a new standard (B.S.2606) specifying requirements for flexible lead-rubber gloves for X-ray workers. Copies of this standard may be obtained from the institution's sales branch, 2, Park Street, London, W.1, price 2*s.* 6*d.*

CORRIGENDUM: *Hydrocortisone in Lesions of Soft Tissue.*—In the article by Dr. Crisp and Dr. Hume Kendall (March 5), the formula of hydrocortisone was wrongly given. The positions of the – OH and – CO. CH_2OH groups attached to the 17 carbon atom should be reversed.

Diary of the Week

MAY 8 TO 14

Monday, 9th

POSTGRADUATE MEDICAL SCHOOL OF LONDON, Ducane Road, London, W.12
4 P.M. Dr. R. I. S. Bayliss: Infantilism and Dwarfism.
ST. MARY'S HOSPITAL MEDICAL SCHOOL, Paddington, W.2
5 P.M. Prof. F. D. Moore (Harvard): Endocrinology and Metabolism in Surgical Care. (First of two lectures.)
INSTITUTE OF CARDIOLOGY, National Heart Hospital, Westmoreland Street, W.1
9.30 A.M. Sir John Parkinson: Diseases of the Aorta.
MEDICAL SOCIETY OF LONDON, 11, Chandos Street, W.1
8.45 P.M. Dr. Macdonald Critchley: Verbal Symbols in Thought. (Annual oration.)
ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW, 242, St. Vincent Street, Glasgow, C.2
5 P.M. Dr. DeWitt Hendee Smith (Princeton): Ballistocardiography.

Tuesday, 10th

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.2
3.45 P.M. Dr. H. J. Hoffman: Innervation of Voluntary Muscle. (Arnott demonstration.)
UNIVERSITY COLLEGE, Gower Street, W.C.1
5.15 P.M. Dr. Mary Pickford: Antidiuresis. (Cushny lecture.)
5.30 P.M. Prof. H. C. Brown (Purdue University): Proposed Quantitative Treatment of Aromatic Substitution.
KING'S COLLEGE, Strand, W.C.2
5.30 P.M. Dr. Harriett Ephrussi-Taylor (Paris): Induced Transformations of Bacteria. (First of three lectures.)
ROYAL SOCIETY OF MEDICINE, 1, Wimpole Street, W.1
5.30 P.M. *Experimental Medicine and Therapeutics.* Dr. Harry Harris, Dr. J. Anderson, Dr. M. D. Milne, Dr. E. M. Darmady: Renal Tubules.
8 P.M. *Psychiatry.* Dr. D. Russell Davis, Dr. Norma Kent, Mr. Richard Lynn, Mr. C. V. Jackson, Mr. G. Ettlinger: Psychological Factors in Educational Disability.
WRIGHT-FLEMING INSTITUTE OF MICROBIOLOGY, St. Mary's Hospital Medical School
5 P.M. Dr. D. A. Long: Response of the Host to Bacterial Infection.
INSTITUTE OF DERMATOLOGY, St. John's Hospital, Lisle Street, W.C.2
5.30 P.M. Dr. G. C. Wells: Disorders in Pigmentation.
UNIVERSITY OF ST. ANDREWS, Queen's College, Dundee
2.30 P.M. Mr. Andrew Logan, Dr. R. M. Marquis, Prof. D. M. Douglas: Consideration of Aortic Stenosis and its Surgical Treatment.

Wednesday, 11th

POSTGRADUATE MEDICAL SCHOOL OF LONDON
4 P.M. Prof. G. Payling Wright: General Pathology of Tuberculosis. (Second of three lectures.)
ST. MARY'S HOSPITAL MEDICAL SCHOOL
5 P.M. Professor Moore: Endocrinology and Metabolism in Surgical Care. (Second of two lectures.)
INSTITUTE OF DISEASES OF THE CHEST, Brompton, S.W.3
5 P.M. Dr. F. P. Lee Lander: Prognosis in Bronchiectasis.
INSTITUTE OF DERMATOLOGY
5.30 P.M. Dr. R. W. Riddell: Pathogenesis of Fungous Infections of the Skin.
NATIONAL INSTITUTE FOR MEDICAL RESEARCH, Mill Hill, N.W.7
5 P.M. Prof. E. L. Smith (Utah): Chemistry of Antibodies and Gamma Globulins.

Thursday, 12th

ROYAL COLLEGE OF SURGEONS OF ENGLAND
5 P.M. Mr. R. V. Cooke: Advanced Carcinoma of the Colon, with particular reference to the Inflammatory Factor. (Hunterian lecture.)
POSTGRADUATE MEDICAL SCHOOL OF LONDON
4 P.M. Dr. C. L. Cope: Cortisone and A.C.T.H.
UNIVERSITY COLLEGE
4.45 P.M. Prof. E. L. Smith: Mode of Action of Proteolytic Enzymes. (First of three lectures.)
KING'S COLLEGE
5.15 P.M. Prof. Igino Spadolini (Florence): Effects of the Acetylcholine-cholinesterase System on the Heart. (Halliburton lecture.)
ROYAL SOCIETY OF MEDICINE
5 P.M. *Ophthalmology.* Prof. J. H. Dunnington: Hypotony after Cataract Extraction.
INSTITUTE OF DERMATOLOGY
5.30 P.M. Dr. J. O. Oliver: Antibiotics.
ROYAL SOCIETY, Burlington House, W.1
4.30 P.M. Dr. E. B. Chain, F.R.S.: Recent Advances in Carbohydrate Metabolism.
ALFRED ADLER MEDICAL SOCIETY
8 P.M. (11, Chandos Street, W.1.) Dr. W. P. Berrington: Fugue States.
NUFFIELD ORTHOPÆDIC CENTRE, Wingfield-Morris Orthopædic Hospital, Oxford
8.30 P.M. Dr. A. B. Kinnier Wilson: New Approach to Respiratory Poliomyelitis.
HONYMAN GILLESPIE LECTURES
5 P.M. (University New Buildings, Teviot Place, Edinburgh, 8.) Mr. G. H. Macnab: Maldescent of the Testicle.
UNIVERSITY OF ST. ANDREWS, Medical School, Small's Wynd, Dundee
5 P.M. Dr. H. Payling Wright: Thrombosis and some less recognised Aspects of Anticoagulant Therapy.
UNIVERSITY OF DUBLIN, Trinity College
4.30 P.M. Prof. G. R. Cameron, F.R.S.: New Fields in Cell Pathology. (John Mallet Purser lecture.)

Friday, 13th

POSTGRADUATE MEDICAL SCHOOL OF LONDON
2 P.M. Dr. J. H. Middlemiss: Radiology of the Acute Abdomen.
UNIVERSITY COLLEGE
5.15 P.M. Dr. L. E. Bayliss: Process of Secretion. (Cushny lecture.)
ST. MARY'S HOSPITAL MEDICAL SCHOOL
5 P.M. Sir Heneage Ogilvie: Shock.
INSTITUTE OF LARYNGOLOGY AND OTOLOGY, 330, Gray's Inn Road, W.C.1
3.30 P.M. Mr. A. R. Dingley: Tonsillectomy in Children and Adults.
UNIVERSITY OF ST. ANDREWS, Queen's College, Dundee
2.30 P.M. Prof. E. J. Wayne, Dr. Cecil Pickard: Angiocardiography in Congenital Heart-disease.

Saturday, 14th

BIOCHEMICAL SOCIETY
11 A.M. (University of Reading.) Scientific papers.

Births, Marriages, and Deaths

BIRTHS

LUNTZ.—On April 25, at Sorrento Maternity Hospital, Birmingham, to Pamela, wife of George Richard William Neal Luntz, M.R.C.P.—a daughter (Verity Anne).

WESTLAKE.—On April 25, to Nora, wife of Dr. E. Keith Westlake, M.D., M.R.C.P.—a sister for Carol Anne (Diana Elizabeth).

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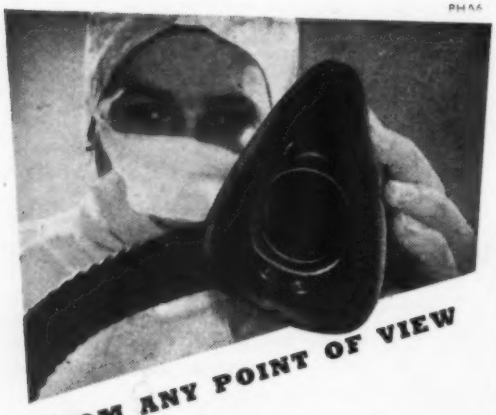

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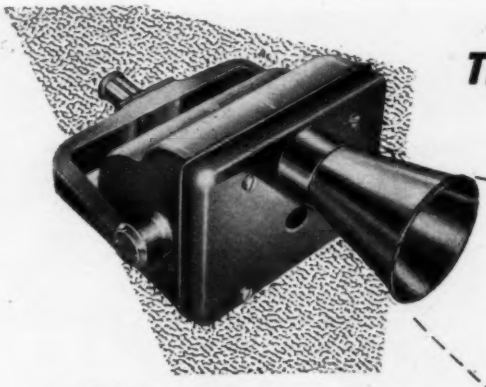

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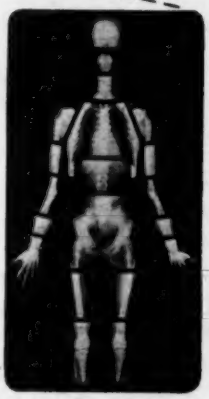

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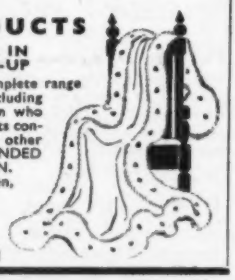

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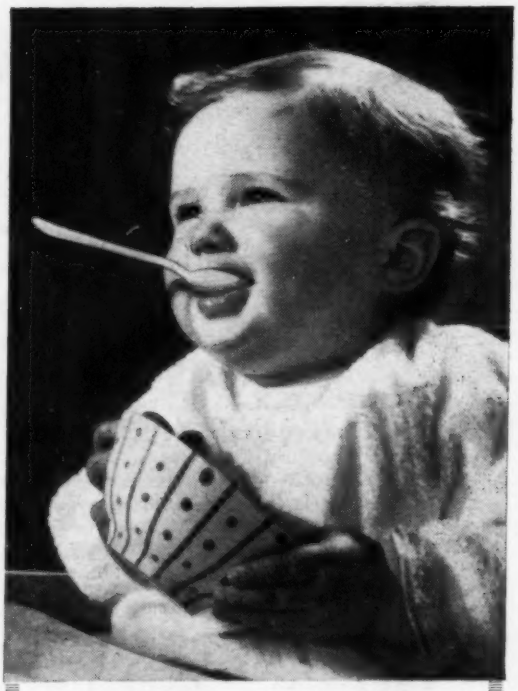

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Academic and Educational

EXAMINING BOARD IN ENGLAND
by the
ROYAL COLLEGE OF PHYSICIANS OF LONDON
and the
ROYAL COLLEGE OF SURGEONS OF ENGLAND

Notice is hereby given that the following Examinations will commence on the dates stated below :—

DIPLOMA IN LARYNGOLOGY AND OTOLOGY
DIPLOMA IN PSYCHOLOGICAL MEDICINE
9th June

CERTIFICATE AND DIPLOMA IN PUBLIC HEALTH
16th June

DIPLOMA IN MEDICAL RADIO-DIAGNOSIS
Part I—23rd June

Applications and fees for either or both Parts of an Examination must reach the Secretary, Examination Hall, Queen-square, London, W.C.1, at least 21 days before Part I of the Examination begins. FRANCIS M. STENT, Secretary.

ROYAL COLLEGE OF SURGEONS OF ENGLAND
Lincoln's Inn-fields, London, W.C.2

COUNCIL ELECTION

Tuesday, 19th April, was the last day on which the names of candidates were to be received for the election of Members of the Council, which will take place on 7TH JULY. 8 nominations have been forwarded to the Secretary by candidates seeking to fill the 3 vacancies occasioned by the retirement, in rotation, of Sir Cecil Wakeley, Bt., Mr. A. Lawrence Abel, and Mr. J. B. Oldham.

1. Arthur Lawrence Abel, Princess Beatrice Hospital. Fellow 1920. Council 1947–55.
2. James Bagot Oldham, Royal Liverpool United Hospital. Fellow 1925. Council 1947–55.
3. Rodney Honor Maingot, Royal Free Hospital. Fellow 1920.
4. Ronald Henry Ottywell Betham Robinson, St. Thomas's Hospital. Fellow 1921.
5. Horace Powell Winsbury-White, St. Peter's, St. Paul's and St. Philip's Hospitals. Fellow 1922.
6. Norman Leslie Capener, Royal Devon and Exeter Hospital, Exeter. Fellow 1924.
7. Harold Clifford Edwards, C.B.E., King's College Hospital. Fellow 1926.
8. Henry Osmond-Clarke, C.B.E., The London Hospital. Fellow 1932.

UNIVERSITY OF BRISTOL

Provided that sufficient applications are received by 19th June, 1955, the following courses will be arranged to begin in OCTOBER, 1955 :—

CHILD HEALTH. This will last for 1 term (October–December). D.P.H. (BRISTOL). This may be either a full-time (1 academic year) or part-time (2 academic years) course. It is not possible to organise full and part-time courses to run concurrently and so the type of course will depend on the wishes of the majority of applicants.

Inquiries should be addressed to the Director of Medical Postgraduate Studies, The University, Bristol, 8.

UNIVERSITY OF BRISTOL

A REFRESHER COURSE for General Practitioners in " Obstetrics and Gynæcology " will be held from 11TH to 16TH JULY.

Particulars may be obtained from the Director of Medical Postgraduate Studies, The University, Bristol, 8.

THE FACULTY OF RADIOLOGISTS

The SKINNER LECTURE will be delivered by DR. S. WHATELY DAVIDSON, F.R.C.P., F.F.R., of Newcastle-on-Tyne, at the Royal College of Surgeons, Lincoln's Inn-fields, London, W.C.2, on FRIDAY, 20TH MAY, 1955, at 4.30 P.M.

Subject : " Some Anomalies of the Respiratory System."

The Lecture is open to all members of the medical profession.

THE INSTITUTE OF LARYNGOLOGY AND OTOLOGY
(UNIVERSITY OF LONDON)
330/332, Gray's Inn-road, London, W.C.1

PRACTICAL REVISION CLASS for Part II D.L.O. students to include applied anatomy, histology, morbid anatomy, case-demonstrations, demonstration of instruments and apparatus, practice examination papers, &c., from 1ST to 14TH JUNE, 1955. Fee £5 5s.

Detailed syllabus obtainable from the Dean.

TANCRED'S STUDENTSHIPS
DIVINITY : MEDICINE : LAW
£100 p.a. each. For men only

The Governors and Trustees of Tancred's Foundation propose to make their annual election of a Student in Physic at Gonville and Caius College, Cambridge, on the result of the Entrance Examination to be held in JANUARY, 1956, required from candidates for admission to Gonville and Caius College, Cambridge, who intend to read medicine.

Candidates must have been born in England, Scotland or Wales and be members of the Church of England and unmarried. Candidates must be within the ages of 17 years and 22 years on 1st October, 1956. The last day for sending in Petitions is 1st July, 1955.

Further announcements relating to the Divinity and Law Studentships awarded by this Foundation will appear in September, 1955, and February, 1956.

Apply for further particulars and form of Petition stating kind of Studentship and mentioning this paper to the Clerk, R. M. C. HOWARD, Esq., D.S.O., 28, Lincoln's Inn-fields, London, W.C.2.

UNIVERSITY OF LONDON

A COURSE OF 3 LECTURES on " Induced Transformations of Bacteria " will be given by Dr. HARRIETT EPHRUSSI-TAYLOR (Paris) at 5.30 P.M. on 10TH, 11TH, and 13TH MAY at King's College, Strand, W.C.2.

Admission free, without ticket.

JAMES HENDERSON, Academic Registrar.

UNIVERSITY OF LONDON

A LECTURE on " Certain Problems in Large Ring Chemistry " will be given by Prof. D. J. CRAM (California) at 5.30 P.M. on 16TH MAY at Imperial College of Science and Technology (Chemistry Lecture Theatre), Imperial Institute-road, S.W.7.

Admission free, without ticket.

JAMES HENDERSON, Academic Registrar.

UNIVERSITY OF LONDON. The Senate invite applications for the READERSHIP IN BACTERIOLOGY tenable at Guy's Hospital Medical School (salary not less than £1900 a year).

Applications (10 copies) must be received not later than 7th June, 1955, by the Academic Registrar, University of London, Senate House, W.C.1, from whom further particulars may be obtained.

THE UNIVERSITY OF LEEDS. Department of Anæsthetics. Applications are invited from registered medical practitioners for appointment as LECTURER IN ANÆSTHETICS at a salary on the scale £1100–£100–£1700 a year, according to qualifications and experience.

Applications (3 copies), stating date of birth, qualifications and experience, together with the names of 3 referees, should reach the Registrar, The University, Leeds, 2 (from whom further particulars may be obtained), not later than 4th June, 1955.

UNIVERSITY OF EDINBURGH. Applications are invited for a LECTURESHIP IN PHYSIOLOGY. Salary scale £700–£75–£1000 p.a., with placement according to qualifications and experience and with superannuation benefit and family allowance where applicable. A medical qualification is not essential, but candidates must have an Honours Degree in Physiology, and some research experience.

Further particulars may be obtained from the undersigned with whom applications, together with the names of 2 referees, should be lodged not later than 1st June, 1955.

CHARLES H. STEWART, Secretary to the University.

AUSTRALIA. UNIVERSITY OF ADELAIDE. Gwen-DOLYN MICHELL FOUNDATION FOR MEDICAL RESEARCH. The University invites applications from registered medical practitioners for an appointment as a RESEARCH WORKER under the Foundation.

Duties : The appointee will be required to conduct research in the field of experimental medicine ; 1 of the projects must be in the field of psychosomatic medicine. He will be attached, for administrative purposes to the University Department of Medicine at the Royal Adelaide Hospital and will work under the general direction of the Professor of Medicine. The post is not primarily a teaching one but opportunities for undergraduate and postgraduate teaching will be provided if the appointee so desires.

Facilities : Facilities for conducting experimental and clinical research are available in the Department of Medicine, and it is expected that there will be close liaison with the Institute of Medical and Veterinary Science where there are active Departments of Bacteriology, Pathology, Hæmatology and Biochemistry. Access to patients will be through the Department of Medicine, and it is expected that honorary status in the Royal Adelaide Hospital will be granted to the appointee during the tenure of his appointment.

Salary : £A2000 a year with superannuation benefits on the F.S.S.U. basis.

Status : That of a Reader in the University.

Terms of appointment : The appointment will be for a period of 3 years in the first instance, further appointment then being subject to satisfactory service. In general the conditions of appointment will be similar to paragraphs 3, 5 and 6 of those appertaining to Readers in the University, which will be supplied on request to the Secretary, Association of Universities of the British Commonwealth, 36, Gordon-square, London, W.C.1, or to the undersigned. Travelling expenses will be provided in accordance with paragraph 6 of those conditions.

Applications must include particulars of age, nationality, marital status, academic record, teaching qualifications, war service (if any), and present position ; a list of publications ; the names and addresses of 3 referees of whom inquiries may be made ; a recent photograph ; and a medical certificate of good health. They should reach the undersigned not later than 17th June, 1955. Further information will be supplied on request to—

V. A. EDGELOE, Registrar.

The University of Adelaide, Adelaide, South Australia.

EMPIRE RHEUMATISM COUNCIL. Applications are invited for a TRAVELLING FELLOWSHIP tenable for up to 1 year, to prosecute research on some aspect of the Rheumatic Diseases. Medical or scientific qualifications are required. Salary according to qualifications and experience, but not less than £1000 p.a. (for lesser period than 1 year, pro rata).

Applications, stating age, qualifications and experience, should be sent with the names of 2 referees not later than 24th May, 1955, to the General Secretary, Empire Rheumatism Council, Tavistock House (N), Tavistock-square, W.C.1.

THE HOSPITAL FOR SICK CHILDREN, Great Ormond-street London, W.C.1. DEPARTMENT OF MORBID ANATOMY. A vacancy exists for a RESEARCH FELLOW IN HISTOCHEMISTRY. The post will in the first instance be tenable for 1 year. Salary £750–£1000 p.a. (plus superannuation) according to age, qualifications and experience.

Forms of application, which must be returned by 15th June, 1955, and further particulars are obtainable from the undersigned. H. F. RUTHERFORD, House Governor and Secretary.

BRITISH POSTGRADUATE MEDICAL FEDERATION (UNIVERSITY OF LONDON). INSTITUTE OF ORTHOPÆDICS, ROYAL NATIONAL ORTHOPÆDIC HOSPITAL, 234, Great Portland-street, London, W.1. Applications are invited for the post of ASSISTANT IN MORBID ANATOMY. The post will provide experience of routine orthopædic pathology and opportunity for research. Interest in experimental work an advantage. Salary £1000–£100–£1300, according to experience. Tenable in the first instance for 1 year, and renewable.

Applications, with the names of 2 referees, should be sent, by 3rd June, 1955, to the Dean, from whom further particulars may be obtained.

NUFFIELD DEPARTMENT OF OBSTETRICS AND GYNÆCOLOGY (UNIVERSITY OF OXFORD). Applications are invited for the post of Whole-time ASSISTANT (non-resident) under the direction of Prof. Chassar Moir, to commence in August, 1955. The minimum salary is £850 p.a. Candidates must be members of the Royal College of Obstetricians and Gynæcologists.

Further details may be obtained from the Secretary, Nuffield Department of Obstetrics and Gynæcology, Radcliffe Infirmary, Oxford. Applications, with names of 3 referees, should be received by 23rd May.

Hospital Services : Senior Appointments

MOORFIELDS, WESTMINSTER AND CENTRAL EYE HOSPITAL (MOORFIELDS BRANCH), City-road, London, E.C.1. Applications are invited for a MEDICAL OFFICER to be in charge of a Refraction Clinic to which 2 Ophthalmic Opticians will be attached, to attend on Friday mornings each week at 9.30 A.M. The Medical Officer will be responsible for the work of the clinic and for the efficient discharge of the duties carried out by the Ophthalmic Opticians. The post will be graded Senior Hospital Medical Officer and remuneration will be in accordance with the provisions of terms and conditions of service of hospital medical and dental staffs. The post will be assessed at 4 hours per week—3-hour session and 1-hour travelling time.

Applications should be made on the official form which may be obtained from the undersigned, and should be received not later than 14th May, 1955. A photograph of the applicant should be enclosed. A copy of the regulations governing the appointment will be supplied on request.

A. J. M. TARRANT, House Governor.

AMENDED ADVERTISEMENT

NORTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD.

(1) CONSULTANT PSYCHIATRIST (part-time, 5 half-days a week), Marlborough Day Hospital, 38, Marlborough-place, N.W.8, recently established in new premises for all forms of out-patient psychiatric treatment including group methods and child guidance.

Applications by 6th June, 1955.

(2) CONSULTANT HOMŒOPATHIC PHYSICIAN (2 half-days a week), Royal London Homœopathic Hospital (183 Beds).

Applications by 8th June, 1955.

(3) ASSISTANT PSYCHIATRIST (whole-time). Senior Hospital Medical Officer grade, Friern Hospital, New Southgate, N.11 (2470 Beds).

Applications by 10th June, 1955.

(4) ASSISTANT PSYCHIATRIST (whole-time). Senior Hospital Medical Officer grade, St. Bernard's Hospital, Southall, Middlesex (2421 Beds).

Applications by 10th June, 1955.

(5) PHYSICIAN in Physical Medicine (2 half-days a week), Hornsey Central Hospital, Park-road, N.8 (61 Beds). Senior Hospital Medical Officer grade.

Applications by 13th June, 1955.

AMENDED ADVERTISEMENT

(6) CONSULTANT ANÆSTHETIST (whole-time or maximum sessions), Hitchin Hospitals. Duties mainly at Lister Hospital (350 Beds) and North Herts and South Beds Hospital (116 Beds).

Applications by 3rd June, 1955.

Hospitals may be visited by direct appointment.

Application forms obtainable from, and returnable to, Secretary, North West Metropolitan Regional Hospital Board, 11A, Portland-place, W.1.

ROYAL FREE HOSPITAL. Applications are invited from registered medical practitioners for the post of Part-time CONSULTANT RADIOLOGIST in the Diagnostic X-ray Department of the Royal Free Hospital. Duties to commence on 1st October, 1955. Applicants should hold a suitable higher qualification.

Applications, with details of qualifications and experience, and giving the names of 3 referees, should be sent to the Secretary to the Board of Governors, the Royal Free Hospital, Gray's Inn-road, W.C.1, not later than 1st June.

ROYAL FREE HOSPITAL. X-ray Department. Applications are invited from registered medical practitioners for the post of Part-time SENIOR HOSPITAL MEDICAL OFFICER to the Diagnostic X-ray Department of the Royal Free Hospital. Duties to commence on 1st October, 1955. Applicants should hold a suitable higher qualification.

Applications, with details of qualifications and experience, and giving the names of 3 referees, should be sent to the Secretary to the Board of Governors, Royal Free Hospital, Gray's Inn-road, W.C.1, not later than 1st June.

SOUTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD requires Part-time CONSULTANT ORTHOPÆDIC SURGEON (4 half-days per week) for the Battersea and Putney Group of hospitals. Duties mainly at Battersea General Hospital.

Applications (5 copies), giving date of birth, qualifications, experience, and names of 3 referees, to Secretary (S.1), South West Metropolitan Regional Hospital Board, 11A, Portland-place, W.1, by 31st May, 1955. Applicants may visit Hospital by local arrangement.

THE HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.1. There will be a vacancy in July, 1955, for a Senior Hospital Medical Officer as ASSISTANT RADIOLOGIST. He will be required to attend 5 sessions per week. Applicants must hold the Diploma in Medical Radiology.

Further particulars and form of application, which must be returned not later than 31st May, 1955, are obtainable from the undersigned.

H. F. RUTHERFORD, House Governor and Secretary.

EAST ANGLIAN REGIONAL HOSPITAL BOARD. CONSULTANT SURGEON (part-time—8 notional half-days weekly), Peterborough Hospital Group. Main hospital Peterborough Memorial.

Applications (8 copies), stating age, experience, and names of 3 referees, to Secretary of Board, 117, Chesterton-road, Cambridge, by 16th May, 1955. Candidates invited to visit hospitals by direct arrangement with Hospital Management Committee Secretary, Memorial Hospital, Peterborough.

LEEDS REGIONAL HOSPITAL BOARD.

Whole-time SENIOR CASUALTY OFFICER for duties at the Hull Royal Infirmary. The person appointed will be required to undertake the routine duties of the department under the general supervision of the Consultant Orthopædic Surgeon-in-charge, and will be required to reside in Hull. Salary will be within the range of £1500–£1950 p.a. and the tenure of the appointment will be for a period not exceeding 4 years. The appointment will be superannuable and subject to terms and conditions of service as laid down by the Board which will be similar but not necessarily identical to the terms and conditions of service of hospital medical and dental staffs.

Part-time CONSULTANT ANÆSTHETIST (8 sessions per week) for duties at hospitals in the Huddersfield area. The person appointed to reside in Huddersfield.

Whole-time ASSISTANT RADIOLOGIST (Senior Hospital Medical Officer scale) for duties at hospitals in the Leeds A and B Groups. Applicants should have had wide experience in diagnostic radiology, and the possession of the D.M.R. is essential. The person appointed will work under the general guidance of the Consultant in charge of the Department, and will be required to reside in or near Leeds.

Whole-time ASSISTANT PSYCHIATRISTS (Senior Hospital Medical Officer scale) for duties at the following mental hospitals together with outpatient clinical duties as associated general hospitals :—

Menston Hospital, near Leeds (2500 Beds).

Stanley Royd Hospital, Wakefield (2000 Beds).

Storthes Hall Hospital, Kirkburton, near Huddersfield (2680 Beds).

Further details with regard to the duties, accommodation available, &c., for the above appointments may be obtained from the Secretary to the Board.

Applications (12 copies), stating age, qualifications, and details of appointments held showing dates, with names and addresses of 3 referees, to the Secretary, Park-parade, Harrogate, by 21st May, 1955.

MANCHESTER REGIONAL HOSPITAL BOARD.

(*a*) Whole-time or maximum Part-time Additional CONSULTANT RADIOLOGIST to the Bury and Rossendale and Rochdale and District Hospital Centres, to live in Rochdale area and concentrate mainly on the Rochdale Group of hospitals and clinics. Wide experience and higher qualifications essential.

(*b*) Whole-time MEDICAL DIRECTOR (Senior Hospital Medical Officer) of 2 Mass Miniature Radiography Units, based on Ladywell Hospital, Salford, and Sparthfield Clinic, Rochdale. Previous experience of M.M.R. desirable. Appointee to be prepared to participate in multi-unit surveys in other parts of the Region.

Application forms from the Senior Administrative Medical Officer to the Board, Cheetwood-road, Manchester, 8, to be returned by 16th May, 1955.

MANCHESTER. UNITED MANCHESTER HOSPITALS. MANCHESTER ROYAL EYE HOSPITAL. Applications are invited for the post of Full-time SENIOR HOSPITAL MEDICAL OFFICER (non-resident). Previous experience in ophthalmology essential. The terms and conditions of service for hospital medical and dental staffs will apply.

Applications, giving details of past experience and qualifications, together with the names of 3 referees, to be addressed to the undersigned as early as possible. (Special application forms can be obtained on request.)

F. J. CABLE, Secretary, United Manchester Hospitals.

NORTH EAST METROPOLITAN REGIONAL HOSPITAL BOARD.

(1) Full-time ASSISTANT PSYCHIATRIST (Senior Hospital Medical Officer grade), Warley Hospital, Brentwood, Essex. Resident post. Modern unfurnished house available.

(2) Part-time CONSULTANT PHYSICIAN in Physical Medicine, Cerebral Palsy Unit, Stevens-road, Ilford, Essex (1 session a week).

Applications (6 copies), and names of 3 referees, should reach the Secretary, 11A, Portland-place, London, W.1, by Saturday, 21st May, 1955.

OXFORD. UNITED OXFORD HOSPITALS. OXFORD REGIONAL HOSPITAL BOARD. Applications are invited from registered medical practitioners for the post of CONSULTANT in Obstetrics and Gynæcology whole-time or maximum part-time at the option of the successful candidate who will be First Assistant in the Area Department of Obstetrics and Gynæcology in the United Oxford Hospitals. He will be responsible for obstetrics and gynæcology in the hospitals of Banbury and District Hospital Management Committee. Candidates must hold the M.R.C.O.G. and should have a higher surgical qualification.

Applications (10 copies), to be submitted by 27th May, 1955, to the Secretary, Oxford Regional Hospital Board, 43, Banbury-road, Oxford, from whom further details may be obtained.

OXFORD REGIONAL HOSPITAL BOARD. Applications are invited for the post of Part-time CONSULTANT SURGEON (8/11ths) to the hospitals in the Kettering and Northampton area. The major portion of the duties will be in Kettering and the successful applicant will be required to live in this area. Applicants may visit the hospitals by arrangement with the Hospital Management Committee Secretary, Kettering General Hospital.

Applications (12 copies), stating age, qualifications, experience, and the names of 3 referees, must reach the Secretary, of the Board, 43, Banbury-road, Oxford, by 7th June.

SHEFFIELD REGIONAL HOSPITAL BOARD. Con-SULTANT E.N.T. SURGEON required for 8 notional half-days per week mainly at the Leicester Royal Infirmary.

Application forms and further details from the Senior Administrative Medical Officer, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield. Forms to be returned by 4th June, 1955.

SHEFFIELD REGIONAL HOSPITAL BOARD. Whole-time SENIOR ASSISTANT PSYCHIATRIST required for the Saxondale Hospital, Radcliffe-on-Trent. A house is available for the successful candidate. Salary scale £1500–£50–£1950.

Application forms and further details from Senior Administrative Medical Officer, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield. Forms to be returned by 28th May, 1955.

SHEFFIELD. THE UNITED SHEFFIELD HOSPITALS. Applications are invited for the post of Part-time CONSULTANT ASSISTANT ORTHOPÆDIC SURGEON with maximum part-time sessions. Duties primarily at the Royal Hospital but some sessions at the Edgar Allen Physical Treatment Centre.

Applications (20 copies), stating age, qualifications and experience, with the names of 3 referees, should be sent not later than 31st May, 1955, to the Chief Administrative Officer, The United Sheffield Hospitals, Central Office, West-street, Sheffield, 1, from whom further particulars may be obtained. The Hospital and the Centre may be visited by arrangement.

SHEFFIELD. THE UNITED SHEFFIELD HOSPITALS. Applications are invited for the post of Part-time CONSULTANT ASSISTANT ORTHOPÆDIC SURGEON with maximum part-time sessions. Duties primarily at the Royal Infirmary but some sessions at the Children's Hospital.

Applications (20 copies), stating age, qualifications, and experience, with the names of 3 referees, should be sent not later than 31st May, 1955, to the Chief Administrative Officer, The United Sheffield Hospitals, Central Office, West-street, Sheffield, 1, from whom further particulars may be obtained. The hospitals may be visited by arrangement.

SOUTH AFRICA. PROVINCIAL ADMINISTRATION OF THE CAPE OF GOOD HOPE. UNIVERSITY OF CAPE TOWN. Joint Medical Staff for Groote Schuur and other Teaching Hospitals. Vacancy :—

Applications are invited from registered medical practitioners (registered specialists) for appointment to the following post at the Groote Schuur Hospital, Cape Town :—

DEPARTMENT OF RADIOTHERAPY

MEDICAL PRACTITIONER (Grade E) Radiologist, with salary at the rate of £1600 p.a.

The conditions of service are prescribed in terms of Hospital Board Service Ordinance No. 19 of 1941, as amended, and the regulations framed thereunder. In addition to the scale of salary indicated a cost-of-living allowance at rates prescribed from time to time by the Administrator is payable to whole-time officials and employees. The Joint Medical Staff is required to serve jointly the Provincial Administration of the Cape of Good Hope and the University of Cape Town. Candidates must have not less than 3 years experience after registration as a Specialist in the specialty in which the vacancy exists.

The successful candidate will be required to submit satisfactory birth and health certificates and their appointment will be subject to the following conditions :—

(i) Appointment will be on contract for 5 years in the case of a citizen of a Commonwealth country or the Republic of Ireland and 6 years in the case of a citizen of European countries other than the United Kingdom and the Republic of Ireland.

(ii) Transport expenses (third class by rail overseas and second or cabin class steamship fare and first class by rail in the Union) necessarily incurred by the successful applicant from place of residence to the place of assumption of duty in South Africa, will be defrayed by the Administration provided that, if the contract is broken within 1 year of the date of assumption of duty the person appointed must refund to the Administration the full amount paid in respect of transport expenses and if the contract is broken within 5 years of the date of assumption of duty in the case of a Commonwealth citizen and 6 years in the case of a citizen of another European country, the person appointed shall refund to the Administration the pro rata share of the full amount above referred to in respect of the unexpired period.

(iii) The person so appointed will be offered permanent appointment during the terms of contract but not earlier than 3 years from the date of assumption of duty or with effect from the conclusion of the contract, provided he/she has passed an examination in Afrikaans as second language, which examination shall not be lower than the standard required for the Junior Certificate Examination of the Department of Education of this Province and provided further that his/her services and conduct during the period of contract are satisfactory and his/her state of health is such as will enable him/her to continue to discharge efficiently all the duties of the post in which he/she will be employed.

Application must be made on the prescribed form, Staff 23, which is obtainable from the Staff Clerk, Room 102, South Africa House, Trafalgar-square, London, W.C.2. The completed application forms must be addressed to the Director of Hospital Services, P.O. Box 2060, Cape Town, South Africa, and must reach him not later than 15th June, 1955. Candidates must state the earliest date on which they can assume duty.

SCOTLAND. WESTERN REGIONAL HOSPITAL BOARD. Applications are invited for the appointment of Whole-time ASSISTANT PSYCHIATRIST at Hartwood Mental Hospital, Shotts, Lanarkshire. Salary (at age 32 and over) on the scale £1500–£50–£1950. This appointment is subject to the National Health Service (Scotland) superannuation regulations.

Applications (16 copies), stating date of birth, qualifications, experience, present appointment, and the names of 3 referees, to reach the Secretary, Western Regional Hospital Board, 64, West Regent-street, Glasgow, not later than 30 days after the publication of this advertisement.

SCOTLAND. SOUTH-EASTERN REGIONAL HOS-PITAL BOARD. EDINBURGH SOUTHERN HOSPITALS BOARD OF MANAGEMENT. Applications are invited from registered medical practitioners with administrative experience for the post of GROUP MEDICAL SUPERINTENDENT on the salary scale of £1450–£50(3)–£1600–£75(1)–£1675 p.a. The duties attaching to the post include responsibility to the Board of Management for the medical administration of the 6 hospitals comprising the Group—the major hospitals being the Bruntsfield Hospital (81 Beds), the Deaconess Hospital (96 Beds), and the Elsie Inglis Maternity Hospital (73 Beds).

Applications, giving particulars of age, qualifications, and experience, together with the names and addresses of 3 referees, should be sent to the Secretary, South-Eastern Regional Hospital Board, Scotland, 11, Drumsheugh-gardens, Edinburgh, 3, to reach there not later than 18th May, 1955.

NORTHERN IRELAND HOSPITALS AUTHORITY. Applications are invited for a post as CONSULTANT ANÆS-THETIST at hospitals managed by the South Tyrone, South Armagh and St. Luke's Hospital Management Committees. The appointment will be on a part-time basis of 9 half-days of duty weekly and the terms and conditions will be in accordance with the Authority's application of the Spens report to Northern Ireland.

Applications should be made on a form obtainable (with further particulars) from the Secretary, Northern Ireland Hospitals Authority, 44–46, Queen-street, Belfast, and will be received not later than 25th May, 1955.

Hospital Services : Junior Appointments

BATTERSEA GENERAL HOSPITAL, Battersea Park, S.W.11. HOUSE SURGEON/CASUALTY OFFICER (resident or non-resident), vacant early June. House Officer grade. Not pre-registration.

Apply Hospital Secretary enclosing copies of 2 recent testimonials.

BROMPTON HOSPITAL, S.W.3. Applications invited for post of MEDICAL CHIEF ASSISTANT (half-time). Salary within the Senior Registrar grade. The appointment is for 1 year with eligibility for reappointment. Candidates must hold the M.R.C.P. Diploma or the M.B. of a University.

Applications, stating age, qualifications with dates, nationality and appointments held, together with copies of testimonials, by 12th May, 1955, to—

KENNETH A. F. MILES, House Governor.

CHARING CROSS HOSPITAL GROUP. Applications are invited for the following pre-registration appointments tenable for 6 months from 15th June, 1955 :—

(*a*) **Charing Cross Hospital**

HOUSE PHYSICIAN to the Radiological Department. Candidates taking the D.M.R. will be given time off to attend lectures.

(*b*) **Mount Vernon Hospital**

HOUSE SURGEON to the Gynæcological Department.

(*c*) **Harrow Hospital**

1 HOUSE PHYSICIAN.
2 HOUSE SURGEONS.

(*d*) **Wembley Hospital**

1 HOUSE PHYSICIAN.
3 HOUSE SURGEONS.

Application forms to be returned to the undersigned by 16th May, 1955.

FRANK HART,
House Governor and Secretary to the Board.

Charing Cross Hospital, London, W.C.2.

CHARING CROSS HOSPITAL GROUP. Wembley HOSPITAL. CASUALTY OFFICER (Junior Hospital Medical Officer grading), required at the above Hospital from 12th June, 1955.

Applications, on forms obtainable from the undersigned, giving particulars of age, nationality, qualifications and experience, to be returned by 16th May, 1955.

FRANK HART, Secretary to the Board.

Charing Cross Hospital, W.C.2.

CITY OF LONDON MATERNITY HOSPITAL, Hanley-road, London, N.4. RESIDENT MEDICAL OFFICER (Senior House Officer), vacant 2nd June, recognised for M.R.C.O.G. Also OBSTETRIC HOUSE SURGEONS (2), vacant 7th June and 13th June, recognised for D.Obst.R.C.O.G., and M.R.C.O.G.

Application forms obtainable from Hospital Secretary, returnable by 17th May, 1955.

CONNAUGHT HOSPITAL, Walthamstow, E.17. Clinical ASSISTANT required in the Orthopædic Department for Monday and Friday afternoons. Salary £175 p.a. for each weekly notional half-day.

Applications, with full details and copies of 2 recent testimonials, should be sent immediately to Secretary, Hospital Management Committee Forest Group, Langthorne-road, E.11.

GUY'S-MAUDSLEY NEUROSURGICAL UNIT. Applica-tions are invited for the post of SENIOR HOUSE OFFICER for 6 months commencing 1st June, 1955. The unit, which is housed in the Maudsley Hospital, serves Guy's Hospital and the Bethlem Royal Hospital and the Maudsley Hospital.

Applications to K. J. JOHNSON, House Governor and Secretary, Denmark-hill, London, S.E.5.

COLINDALE HOSPITAL, Colindale-avenue, London, N.W.9. (Tuberculosis only—300 Beds.) NORTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD. SURGICAL REGISTRAR (whole-time), resident or non-resident, required in the Thoracic Surgical Unit at above Hospital, which may be visited by direct appointment with Physician-Superintendent.

Application forms obtainable from, and returnable to, Group Secretary, Hendon Group Hospital Management Committee, Edgware General Hospital, Edgware, Middlesex, by 21st May, 1955.

ELIZABETH GARRETT ANDERSON HOSPITAL, Euston road, N.W.1. (ROYAL FREE HOSPITAL GROUP.) Applications are invited from pre-registration and registered Women medical practitioners for the post of FIRST HOUSE PHYSICIAN for medicine and paediatrics, to become vacant 1st July, 1955. Appointment for 6 months. Salary in accordance with Ministry of Health scale for House Officers.

Applications, with copies of 3 recent testimonials, should be sent to the Secretary, Elizabeth Garrett Anderson Hospital, by 11th May, 1955.

ELIZABETH GARRETT ANDERSON HOSPITAL, Euston-road, N.W.1. (ROYAL FREE HOSPITAL GROUP.) Applications are invited from pre-registration and registered Women medical practitioners for the post of OBSTETRIC HOUSE SURGEON (recognised for the M.R.C.O.G.). Duties to commence 1st July, 1955. Appointment for 6 months. Salary in accordance with Ministry of Health scale for House Officers.

Applications, with copies of 3 recent testimonials, to be sent to the Secretary, Elizabeth Garrett Anderson Hospital, by 11th May, 1955.

ELIZABETH GARRETT ANDERSON HOSPITAL, Euston-road, N.W.1. (ROYAL FREE HOSPITAL GROUP.) Applications are invited from registered Women medical practitioners for the post of RESIDENT ASSISTANT PATHOLOGIST. Salary in accordance with Ministry of Health scale for Senior House Officers. The appointment is for 6 months in the first instance. Duties to commence 1st July, 1955.

Applications, with copies of 3 recent testimonials, should be sent to the Secretary, Elizabeth Garrett Anderson Hospital, by 11th May, 1955.

ELIZABETH GARRETT ANDERSON HOSPITAL, Euston-road, N.W.1. (ROYAL FREE HOSPITAL GROUP.) Applications are invited from pre-registration and registered Women medical practitioners for the post of SECOND HOUSE SURGEON. Appointment for 6 months from 1st July, 1955. Salary according to Ministry of Health scale for House Officers.

Applications, with copies of 3 recent testimonials, should be sent to the Secretary, Elizabeth Garrett Anderson Hospital, by 11th May, 1955.

GREENWICH AND DEPTFORD HOSPITAL MANAGEMENT COMMITTEE. DEPTFORD CHEST CLINIC. Locum Tenens CLINICAL ASSISTANT required to assist the Chest Physician at above Clinic for 4 half-days weekly. Experience in treatment of pulmonary tuberculosis, in performing A.P. refills and interpreting chest X rays essential. National salary and conditions. Present salary £175 p.a. per weekly half-day.

Applications and testimonials to Secretary, Greenwich and Deptford Hospital Management Committee, St. Alfege's Hospital, S.E.10, as soon as possible.

HACKNEY HOSPITAL, London, E.9. (General—844 Beds.) Applications (registered practitioners only) for the post of CASUALTY OFFICER AND HOUSE SURGEON (E.N.T.), now vacant (House Officer grade), should reach Group Secretary, above address, as soon as possible.

HACKNEY HOSPITAL, London, E.9. (844 Beds.) Applications are invited for the 12 months appointment (now vacant) of SENIOR HOUSE OFFICER to the Orthopædic and Traumatic Department.

Applications, with copy testimonials, to reach Group Secretary, above address, by 11th May, quoting HH/SHO.

HOSPITALS FOR DISEASES OF THE CHEST. London CHEST HOSPITAL. RESIDENT HOUSE SURGEON required at the Hospital's Country Branch, near Hitchin and Letchworth, Herts. The post is graded as Senior House Officer and the appointment, which provides excellent opportunities for experience in thoracic surgery, is for 6 months.

Applications from registered medical practitioners, stating age, qualifications with dates, and previous appointments held, with copies of 3 testimonials, should reach the undersigned not later than 24th May. THOMAS BROWN, House Governor.

London Chest Hospital, E.2.

HOSPITALS FOR DISEASES OF THE CHEST. London CHEST HOSPITAL. Applications are invited for the post of MEDICAL REGISTRAR (Cardiac Department), which is graded Registrar, from those who have experience in angiocardiography and cardiac catheterisation. The appointment is for 1 year with eligibility for reappointment.

Applications, stating age and qualifications with dates, accompanied by copies of 3 testimonials, should reach the undersigned not later than 21st May, 1955.

THOMAS BROWN, House Governor.

London Chest Hospital, E.2.

LONDON HOSPITAL, Whitechapel, E.1. Applications are invited for the post of REGISTRAR to the Radiodiagnostic Department. A higher qualification, although desirable, is not essential.

Applications (12 copies), giving the names and addresses of 3 referees, should reach the House Governor by 24th May, 1955.

H. BRIERLEY, House Governor.

LONDON HOSPITAL, Whitechapel, E.1. Applications are invited for the post of SENIOR HOUSE OFFICER to Surgical Outpatients' Department. The appointment becomes vacant on 20th June, 1955.

Applications (6 copies), together with 6 copies of 3 recent testimonials, should reach the House Governor by 12th May, 1955. H. BRIERLEY, House Governor.

METROPOLITAN EAR, NOSE AND THROAT HOSPITAL AT ST. MARY ABBOTS HOSPITAL, Marloes-road, Kensington, W.8. FULHAM AND KENSINGTON HOSPITAL MANAGEMENT COMMITTEE. HOUSE SURGEON (E.N.T.) required immediately. Hospital recognised for D.L.O. Resident appointment for 6 months in first instance.

Applications to be submitted by 13th May, 1955, on forms obtainable from the Hospital Secretary (L104), St. Mary Abbots Hospital.

MILE END HOSPITAL, Bancroft-road, E.1. (475 Beds.) HOUSE PHYSICIAN (pre- or post-registration) required for duty on 17th June, 1955.

Application forms, obtainable from the Physician-Superintendent, to be returned by 20th May, 1955, with copies of not more than 3 testimonials.

MILLER GENERAL HOSPITAL. (180 Beds. Recognised for F.R.C.S. examination.) HOUSE SURGEON vacant 28th May, 1955. 6 months appointment. National salary and conditions.

Applications and testimonials to Secretary, Greenwich and Deptford Hospital Management Committee, St. Alfege's Hospital, S.E.10.

NATIONAL HEART HOSPITAL, Westmoreland-street, W.1. (With which is associated the Institute of Cardiology.) Applications are invited for the post of RESIDENT MEDICAL OFFICER (Male). The appointment is for a period of 6 months from 1st July, 1955, but may be renewed for a further period not exceeding 6 months. The status and salary are either that of a Senior House Officer or Registrar and are in accordance with the national terms and conditions of service.

Applications, with copies of 3 recent testimonials, should be sent to me not later than Friday, 27th May, 1955.

ROBERT G. E. WHITNEY, Secretary to the Board.

NATIONAL HEART HOSPITAL, Westmoreland-street, W.1. (With which is associated the Institute of Cardiology.) Applications are invited for the post of ASSISTANT-RESIDENT MEDICAL OFFICER (Male). The appointment is for a period of 6 months from 1st July, 1955. The status of the post is that of a Senior House Officer and the salary is £745 p.a. in accordance with the terms and conditions of service of hospital medical staff.

Applications, with copies of 3 recent testimonials, should be sent to me not later than Friday, 27th May, 1955.

ROBERT G. E. WHITNEY, Secretary to the Board.

NORTH EAST METROPOLITAN REGIONAL HOSPITAL BOARD.

REGISTRAR in Tuberculosis (resident or non-resident), Myland Hospital and Colchester Chest Clinic, Colchester, Essex.

REGISTRAR in Pathology (resident), St. Ann's General Hospital, Tottenham, N.15.

REGISTRAR in Psychiatry (resident or non-resident), Severalls Hospital, Colchester, Essex.

SURGICAL REGISTRAR (resident), Black Notley Hospital, Braintree, Essex. Recognised for F.R.C.S.

REGISTRAR in Orthopædic and General Surgery (resident), Tilbury and Riverside General Hospital, Tilbury, Essex.

ANÆSTHETIC REGISTRAR (resident), Poplar Hospital, E.14. Recognised for D.A. and F.F.A.R.C.S.

ANÆSTHETIC REGISTRAR (resident or non-resident, sleeping in on duty nights), Hackney Hospital, E.9. Recognised for D.A. and F.F.A.R.C.S.

ANÆSTHETIC REGISTRAR (resident), Oldchurch Hospital, Romford, Essex. Some duties in Neurosurgical Theatre. Recognised for D.A.

Appointments subject to review after 1 year.

Separate applications in duplicate, with 2 copies of 2 recent testimonials, to Secretary, 11A, Portland-place, W.1, by 21st May, 1955.

NORTH MIDDLESEX HOSPITAL, Edmonton, N.18. SENIOR HOUSE OFFICER (resident) in Surgery, required. Appointment for 6 months in the first instance. General surgery, trauma and orthopædics. Post recognised for F.R.C.S.

Applications, stating age, nationality, qualifications, experience, with copies of recent testimonials or names of 2 referees, to Secretary of Hospital, immediately.

POPLAR HOSPITAL. East India Dock-road, E.14. (120 Beds.) HOUSE PHYSICIAN (Senior House Officer grade) required. Duties include inpatient, outpatient and casualty work. Post vacant 1st June, 1955.

Applications, stating age, nationality and qualifications, to the Group Secretary, Bow Group Hospital Management Committee, 2A, Bow-road, London, E.3.

PRINCE OF WALES'S GENERAL HOSPITAL, N.15. (219 Beds.) Applications are invited from qualified medical practitioners for appointment as RESIDENT JUNIOR HOUSE SURGEON for casualty (pre-registration first or second post) for a period of 6 months, vacant immediately.

Application form from the Secretary, Tottenham Group Hospital Management Committee (Group 4), The Green, N.15.

PRINCE OF WALES'S GENERAL HOSPITAL, N.15. (219 Beds.) Applications are invited from registered medical practitioners for the post of SENIOR HOUSE OFFICER RESIDENT SENIOR CASUALTY OFFICER, recognised for F.R.C.S. examination, for a period of 6 months, vacant 4th June, 1955.

Application form from Secretary, Tottenham Group Hospital Management Committee, The Green, N.15, to be returned by 21st May, 1955.

PRINCE OF WALES'S GENERAL HOSPITAL, N.15. (219 Beds.) Applications are invited from registered medical practitioners for the post of RESIDENT GYNÆCOLOGICAL HOUSE SURGEON, recognised for M.R.C.O.G. examination, third post, for a period of 6 months, vacant 2nd June, 1955.

Application form from Secretary, Tottenham Group Hospital Management Committee, The Green, N.15, to be returned by 21st May, 1955.

PADDINGTON GREEN CHILDREN'S HOSPITAL, W.2. (ST. MARY'S HOSPITAL.) Applications are invited for the posts of :—

(*a*) HOUSE SURGEON (first post), pre-registration post, vacant 1st June, 1955. Tenable for 6 months.

(*b*) HOUSE PHYSICIAN (second post), pre-registration post, vacant 1st June, 1955. Tenable for 6 months.

Applications, stating age, nationality, qualifications with dates, and experience, with copies of 3 recent testimonials, should reach the Secretary not later than Saturday, 14th May, 1955.

SOUTH LONDON HOSPITAL FOR WOMEN AND CHILDREN, Clapham Common, S.W.4. Applications are invited from registered Women medical practitioners for the appointment of RESIDENT MEDICAL OFFICER at the above Hospital. Senior House Officer grade. Appointment for 1 year. Duties include care of Children's Ward. Vacant 16th July, 1955.

Application forms from the Secretary.

SOUTH LONDON HOSPITAL FOR WOMEN AND CHILDREN, Clapham Common, S.W.4. PATHOLOGICAL REGISTRAR (clinical), vacant on 27th July, 1955. Applications are invited from Women medical practitioners who should have had experience of laboratory work. Canvassing will disqualify, but candidates are not precluded from visiting the Hospital if they so desire.

Form of application (enclosing stamped addressed envelope) from the Secretary, Lambeth Group Hospital Management Committee, Renfrew-road, S.E.11, to whom completed applications should be returned not later than 20th May, 1955.

SOUTH EAST METROPOLITAN REGIONAL HOSPITAL BOARD. Applications are invited for an appointment as Whole-time REGISTRAR in General Medicine to fill a vacancy in the approved trainee establishment at the Camberwell Group of hospitals. The appointment will be in accordance with the terms and conditions of service of hospital medical and dental staffs (England and Wales), and will be for 1 year in the first instance.

Applications, giving particulars of age, qualifications, and experience with relevant dates, together with the names and addresses of 2 referees, to be sent to the Secretary, Registrars Committee, South East Metropolitan Regional Hospital Board, 11, Portland-place, London, W.1, not later than 21st May, 1955.

ST. MARY'S HOSPITAL, London, W.2. Applications are invited for 2 POSTGRADUATE TRAINEESHIPS from persons intending to take the D.M.R.D. Course in London, October, 1955–57. The possession of a higher qualification would be advantageous. The successful candidates will be required to take up their duties 1st October, 1955. The appointments will be for 1 year, renewable for a second year, and will be remunerated at Senior House Officer rates.

Applications, stating nationality, date of birth, permanent address, qualifications with dates, details and National Health Service gradings of previous and present appointments, together with the names and addresses of 3 referees, should reach ALAN POWDITCH, House Governor, not later than 17th May, 1955.

ST. MARY'S HOSPITAL, W.2. Applications are invited for the post of RESIDENT CLINICAL PATHOLOGIST. Applicants should have held 2 House Officer appointments at this Hospital or another General Hospital approved by the Board of Governors, and preference will be given to those intending to specialise in pathology. The successful candidate will be required to take up his duties as soon as possible; remuneration to be at Senior House Officer rate.

Applications, stating nationality, date of birth, permanent address, qualifications with dates, details and National Health Service gradings of previous and present appointments, together with the names and addresses of 3 referees, should reach ALAN POWDITCH, House Governor, not later than 18th May, 1955.

ST. MARY'S HOSPITAL, W.2. Applications are invited for the post of Part-time REGISTRAR to the Psychiatric Department (inpatient and outpatient) for 4 notional half-days per week. Previous experience in psychiatry is necessary; preference will be given to candidates holding the D.P.M. The appointment will be for a first period of 12 months as from 1st July, 1955; remuneration at Registrar rates.

Applications, stating nationality, date of birth, permanent address, qualifications with dates, details and National Health Service gradings of previous and present appointments, together with the names and addresses of 3 referees, should reach ALAN POWDITCH, House Governor, not later than 25th May, 1955.

ST. MARY'S HOSPITAL, W.2. Applications are invited for the post of Whole-time ANÆSTHETIC REGISTRAR. Candidates should possess the D.A. The appointment is for a first period of 12 months and the successful candidate will be required to take up his duties as soon as possible.

Applications, stating nationality, date of birth, qualifications with dates, details and National Health Service gradings of previous and present appointments together with the names and addresses of 3 referees, should reach ALAN POWDITCH, House Governor, not later than 25th May, 1955.

ST. BARTHOLOMEW'S HOSPITAL, E.C.1. Applications are invited for the post of SENIOR HOUSE OFFICER in Children's Diseases tenable for 1 year from 1st July.

Applications, together with copies of 2 testimonials, should be submitted to the undersigned within the next 10 days.

C. C. CARUS-WILSON, Clerk to the Governors.

ST. ANN'S GENERAL HOSPITAL, N.15. Applications are invited from registered medical practitioners for the appointment of RESIDENT HOUSE PHYSICIAN (Senior House Officer) to above Hospital for duty in the Chest Department with other general duties, for a period of 6 months from 3rd June, 1955.

Application form from Secretary, Tottenham Group Hospital Management Committee, The Green, N.15, to be returned by 21st May, 1955.

ST. ANN'S GENERAL HOSPITAL, N.15. Applications are invited from registered medical practitioners for the appointment of RESIDENT HOUSE SURGEON (Senior House Officer) to above Hospital for a period of 6 months from 14th June, 1955.

Application form from Secretary, Tottenham Group Hospital Management Committee, The Green, N.15, to be returned by 21st May, 1955.

ST. ANN'S GENERAL HOSPITAL, N.15. Applications are invited from registered medical practitioners for the appointment of RESIDENT HOUSE SURGEON (third post) to above Hospital for a period of 6 months from 31st May, 1955.

Application form from Secretary, Tottenham Group Hospital Management Committee, The Green, N.15, to be returned by 21st May, 1955.

ST. CHARLES' HOSPITAL, Ladbroke-grove, W.10. (593 Beds.) Applications are invited for the post of SENIOR HOUSE OFFICER (E.N.T., plastic, orthopædic, ophthalmology, &c.), resident or non-resident.

Applications, stating age, qualifications, experience, together with names and addresses of 2 referees, to be forwarded to Hospital Secretary immediately.

ST. JAMES' HOSPITAL, Balham, S.W.12. South West METROPOLITAN REGIONAL HOSPITAL BOARD. SENIOR REGISTRAR with wide experience in pathology. Post vacant immediately.

Application forms (send stamped addressed foolscap envelope) obtainable from Group Secretary, Wandsworth Hospital Group, at above address, to be completed and returned by 21st May.

ST. JAMES' HOSPITAL, Balham, S.W.12. South West METROPOLITAN REGIONAL HOSPITAL BOARD. ANÆSTHETIC REGISTRARS. Posts vacant June. Recognised for F.F.A.R.C.S.

Application forms (send stamped addressed foolscap envelope) obtainable from Group Secretary, Wandsworth Hospital Group, at above address, to be completed and returned by 20th May.

THE HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.1. There is a vacancy for a Part-time NON-RESIDENT SENIOR SURGICAL REGISTRAR, attending 1 session per week on Monday morning.

Full particulars and form of application, which must be returned not later than Monday, 6th June, 1955, are obtainable from the undersigned.

H. F. RUTHERFORD, House Governor and Secretary.

THE HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.1. There will be vacancies for the following Senior House Officers on 15th October, 1955 :—

2 HOUSE PHYSICIANS.

1 HOUSE SURGEON.

Further particulars and form of application, which must be returned not later than Monday, 6th June, 1955, are obtainable from the undersigned.

H. F. RUTHERFORD, House Governor and Secretary.

THE HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.1. There will be a vacancy for a HOUSE PHYSICIAN to the Neurological and Neurosurgical Department (Senior House Officer) on 1st October, 1955.

Further particulars and form of application, which must be returned not later than Monday, 6th June, 1955, may be obtained from the undersigned.

H. F. RUTHERFORD, House Governor and Secretary.

THE HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.1. There will be a vacancy on 15th October, 1955, for a MEDICAL REGISTRAR AND PATHOLOGIST (Senior Registrar).

Further particulars and form of application, which must be returned not later than Monday, 30th May, 1955, may be obtained from the undersigned.

H. F. RUTHERFORD, House Governor and Secretary.

THE HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.1. There will be a vacancy on 7th September, 1955, for an ASSISTANT RESIDENT MEDICAL OFFICER (grade—Senior House Officer) at the Country Branch Hospital, Tadworth, Surrey (101 Beds).

Further particulars and form of application, which must be returned not later than Monday, 6th June, 1955, are obtainable from the undersigned.

H. F. RUTHERFORD, House Governor and Secretary.

THE HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.1. There will be a vacancy on 16th September, 1955, for a JUNIOR RESIDENT ANÆSTHETIST (Senior House Officer).

Full particulars, with form of application, which must be returned not later than Monday, 6th June, 1955, may be obtained from the undersigned.

H. F. RUTHERFORD, House Governor and Secretary.

WESTMINSTER CHILDREN'S HOSPITAL. (West-MINSTER HOSPITAL TEACHING GROUP.) Applications are invited for the post of RESIDENT MEDICAL OFFICER (Registrar) for duty as soon as possible. The appointment is for 1 year in the first instance.

Applications, with names of 3 referees, should reach the Secretary, Westminster Children's Hospital, Vincent-square, S.W.1, by 14th May.

WOOLWICH GROUP HOSPITAL MANAGEMENT COMMITTEE. HOUSE SURGEONS (gynæcology and obstetrics).

Memorial Hospital, Shooters Hill, Woolwich, S.E.18. Vacant mid-June. Recognised for M.R.C.O.G. (6 months gynæcology.)

St. Nicholas Hospital, Plumstead. Vacant 1st July. Recognised for D.Obst.R.C.O.G., or 3 months obstetrics, 3 months gynæcology for M.R.C.O.G.

Apply to Group Secretary, Memorial Hospital, Woolwich, S.E.18.

ASCOT, BERKSHIRE. HEATHERWOOD ORTHO-PÆDIC HOSPITAL. (212 Beds.) Locum SENIOR REGISTRAR (orthopædics) required immediately until permanent appointment made.

Applications, giving full details, to Hospital Secretary.

ABERDEEN ROYAL MENTAL HOSPITAL. Medical Staff required.

1 JUNIOR HOSPITAL MEDICAL OFFICER. Salary and conditions as per Health Service scale (£775–£50–£1075, less £150 for board, &c.).

2 HOUSE OFFICERS (fully registered). Salary £525, less £125 for board, &c.

Applications, with details, to Physician-Superintendent, Royal Mental Hospital, Cornhill-road, Aberdeen.

AYLESBURY, BUCKINGHAMSHIRE. ROYAL BUCKINGHAMSHIRE HOSPITAL. HOUSE SURGEON to the Department of Ophthalmology which is centred on this Hospital and which conducts work at peripheral clinics. Vacant now. Post is recognised for D.O. and duties will include some children's surgery.

Applications, with 2 testimonials, to Secretary-Superintendent as soon as possible.

AYLESBURY, BUCKINGHAMSHIRE. TINDAL GENERAL HOSPITAL. (260 Beds.) HOUSE PHYSICIAN (Chest Unit). Male or Female. Pre-registration post, but registered practitioners invited to apply. Vacant 3rd July, 1955. Duties include care of about 25 chest cases (including T.B. chalets) and 4 clinics weekly, including refills, forming a progressive chest unit for the Aylesbury area. Instruction in bronchoscopy and bronchography given. An acute Geriatric Unit (27 Beds) and a Medical Outpatient Clinic give general medical experience. No casualty department.

Please apply, with 2 testimonials, to the Administrative Officer as soon as possible.

BATH CLINICAL AREA. South-Western Regional HOSPITAL BOARD. Applications are invited from registered medical practitioners in general practice for 3 appointments as CLINICAL ASSISTANT in General Medicine each for 1 weekly session at the Royal United Hospital, Bath. The successful candidates will work under the general direction of the Consultant Physicians attached to the Bath Hospitals Group. Payment will be at the rate of £175 p.a. per weekly 3½-hour session. The appointments will be held for 1 year, and duties will commence on 5th July, 1955.

Applications, stating date of birth, qualifications, and experience, together with the names and addresses of 2 referees, should be sent to the Secretary of the Regional Hospital Board, 27, Tyndalls Park-road, Bristol, 8, not later than 21st May, 1955.

BATH HOSPITAL MANAGEMENT COMMITTEE. Applications are invited from registered medical practitioners for the post of HOUSE SURGEON at the Bath and Wessex Orthopædic Hospital. The contract will also include duties at the Royal United Hospital which is adjacent. Post offers experience in "cold" orthopædics including children, surgery of arthritis and traumatic surgery. The post is graded Senior House Officer.

Applications, stating age, qualifications and experience, with names of 2 referees, should be forwarded to Group Secretary, Manor Hospital, Combe Park, Bath, by 14th May, 1955.

BATH. ROYAL UNITED HOSPITAL. Applications are invited from registered medical practitioners for the post of HOUSE ANÆSTHETIST (Senior House Officer grade) which becomes vacant at the above Hospital on 31st May, 1955. Facilities for attending evening lectures, when held, at Bristol for the higher Diploma in Anæsthetics examination will be made available. The Hospital is recognised under F.F.A.R.C.S. and D.A. regulations.

Applications, stating age, qualifications and experience, together with names of 2 referees, should be forwarded to Group Secretary, Bath Hospital Management Committee, Manor Hospital, Combe Park, Bath, by 14th May, 1955.

BEDFORD GENERAL HOSPITAL. (437 Beds.) **Locum** RESIDENT CASUALTY OFFICER (Registrar grade) required 28th May pending permanent appointment. Salary £17 10s. per week.

Applications, stating age nationality, qualifications, previous appointments, together with copies of 2 recent testimonials, should be forwarded to Group Secretary, Bedford Group Hospital Management Committee, 3, Kimbolton-road, Bedford.

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL, Edmund-street, BIRMINGHAM, 3. Required, SENIOR HOUSE OFFICER or HOUSE OFFICER (including pre-registration), according to experience.

Detailed applications, with copies of 2 recent testimonials, to the Secretary, Dudley Road Hospital, Birmingham, 18.

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Church-street, BIRMINGHAM, 3. HOUSE SURGEON required, appointment for 6 months, but renewable. Hospital carries resident staff of 5 and provides a 2-year course of instruction recognised for the D.O. (England) and F.R.C.S. (England) in Ophthalmology. Wide experience available in all branches, including surgery.

Detailed applications to Secretary, Dudley Road Hospital, Birmingham, 18.

BIRMINGHAM, 18. DUDLEY ROAD HOSPITAL. House SURGEON required (pre-registration). Recognised for F.R.C.S. 1 of 3 surgical units of approximately 85 general beds under 2 Consultant Surgeons.

Applications, with copies of 2 recent testimonials, to Secretary.

BIRMINGHAM. THE UNITED BIRMINGHAM HOSPITALS AND THE BIRMINGHAM REGIONAL HOSPITAL BOARD. Applications are invited for the joint whole-time appointment of NON-RESIDENT RADIOLOGICAL REGISTRAR (Senior Registrar grade). The duties will be apportioned at 5 sessions in the Teaching Hospital and 6 sessions in the Dudley Road Hospital Group, mainly at Dudley Road Hospital. Candidates must be registered medical practitioners, have had previous experience in the specialty and possess a Diploma in Radiology.

Forms of application may be obtained from the Secretary, United Birmingham Hospitals, Queen Elizabeth Hospital, Birmingham, 15, and should be returned by 21st May, 1955.

BIRMINGHAM. THE UNITED BIRMINGHAM HOSPITALS. Applications are invited for the post of RESIDENT REGISTRAR in Anæsthetics to the United Birmingham Hospitals. The appointment is tenable for 1 year in the first instance. Preference will be given to candidates who have passed Part I, D.A., or Primary F.F.A.R.C.S.

Application forms may be obtained from the Secretary United Birmingham Hospitals, Queen Elizabeth Hospital, Birmingham, 15, and should be returned to him by 14th May, 1955.

BIRMINGHAM ACCIDENT HOSPITAL, Birmingham, 15. (215 Beds.)

RESIDENT SURGICAL OFFICER (Senior House Officer), vacant shortly. Hospital is largest traumatic unit in the country and treats over 50,000 new patients each year. Post recognised for F.R.C.S. and offers opportunity for practical experience in management of all types of injury and teaching by Consultant staff.

RESIDENT HOUSE SURGEON, vacant mid-May. Recognised for F.R.C.S. Appointment for period of 6 months in General Accident Service and (at applicant's request) includes period in 32-Bedded Burns Unit.

Apply Administrator.

BIRMINGHAM REGIONAL HOSPITAL BOARD.

(1) **Birmingham (Dudley Road) Hospital Management Committee, Dudley Road Hospital, Birmingham, 18**

OPHTHALMOLOGIST (Registrar) for Birmingham Eye Hospital, Birmingham 3, Research Department to assist in experimental physiology and clinic research. Opportunity to work for higher degree.

(2) **Birmingham (Sanatoria) Group Hospital Management Committee, Yardley Green Hospital, Birmingham, 9**

MEDICAL REGISTRAR for duties at Yardley Green Hospital (413 Beds), Thoracic Surgical Department (54 Beds) and Birmingham Chest Clinic. Resident, chest diseases including tuberculosis.

(3) **No. 20 Group Hospital Management Committee, Stoney Stanton-road, Coventry**

REGISTRAR in General Medicine for Coventry and Warwickshire Hospital (354 Beds). Resident. Experience in specialty essential.

(4) **Shrewsbury Group Hospital Management Committee, Royal Salop Infirmary, Shrewsbury**

REGISTRAR in E.N.T. Surgery. Duties at E.N.T. Hospital, Shrewsbury (68 Beds), and Copthorne Hospital (168 Beds). Resident or non-resident. Experience in specialty desirable.

(5) **Wolverhampton Hospital Management Committee, The Royal Hospital, Wolverhampton**

RESIDENT SURGICAL REGISTRAR for New Cross Hospital (636 Beds) preferably F.R.C.S.

Application forms from Group Secretaries, to be returned before 23rd May, 1955. Candidates may visit hospitals.

BIRMINGHAM (near). MARSTON GREEN MATERNITY HOSPITAL, Berwicks-lane, MARSTON GREEN, near BIRMINGHAM. HOUSE SURGEON (obstetrics) required 1st July, 1955. (121 obstetric and 10 gynæcological beds.) Recognised for Diploma and Obstetric part of M.R.C.O.G. Premature Baby unit. Affiliated to Birmingham Medical School for training of students.

Applications, with copies of 3 recent testimonials, to Secretary.

BISHOP AUCKLAND GENERAL HOSPITAL. (350 Beds.) SOUTH WEST DURHAM HOSPITAL MANAGEMENT COMMITTEE. RESIDENT ANÆSTHETIST (Senior House Officer) required.

Apply, naming 2 referees, to—

K. G. T. LUXFORD, Group Secretary/Finance Officer.

The General Hospital, Bishop Auckland, Co. Durham.

BLACKBURN AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE. REGISTRAR (medicine) required immediately. Resident post. Duties at Royal Infirmary, Blackburn (262 acute beds) as arranged by Consultant Physicians.

Application forms from Secretary, Hospital Management Committee Office, Royal Infirmary, Blackburn.

BLACKBURN AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE. REGISTRAR (anæsthetics) required. Resident post. Married accommodation available if desired. Duties mainly at Blackburn Royal Infirmary with sessions at Accrington Victoria Hospital and Queen's Park Hospital, Blackburn, as arranged by Consultant-in-charge. Post recognised for D.A. and F.F.A.R.C.S.

Write to Secretary, Hospital Management Committee Office, Royal Infirmary, Blackburn, for application form.

BRADFORD. ST. LUKE'S HOSPITAL AND WOODLANDS HOSPITAL, RAWDON. SENIOR HOUSE OFFICER to Orthopædic Unit vacant now. Salary £745 p.a., less £150 p.a. residential emoluments.

Applications, stating age, nationality, qualifications and experience with copy testimonials, to the Secretary, Bradford Royal Infirmary.

BRADFORD, YORKSHIRE. THE ROYAL EYE AND EAR HOSPITAL. (105 Beds.) SENIOR HOUSE OFFICER required for E.N.T. Department of 56 Beds. Recognised for D.L.O. and F.R.C.S. Salary £745 p.a., less £150 p.a. residential emoluments.

Applications, stating age, nationality, qualifications and experience, with copy testimonials, to Secretary, Bradford Royal Infirmary.

BRIGHTON GENERAL HOSPITAL. Casualty/Medical OFFICER (for casualty and general duties). House Officer grade.

Applications, stating age, qualifications and experience, together with copies of recent testimonials, should be sent to the Physician-Superintendent, Brighton General Hospital, Elmgrove, Brighton, as soon as possible.

BRIGHTON GENERAL HOSPITAL. House Physician (geriatrics), vacant 16th May, 1955.

Applications, stating age, qualifications and experience, together with copies of recent testimonials, should be sent to the Physician-Superintendent, Brighton General Hospital, Elmgrove, Brighton, 7, as soon as possible.

BRIGHTON GENERAL HOSPITAL. House Surgeon (orthopædics), vacant now. This post is recognised as a pre-registration appointment.

Applications, stating age, qualifications and experience, together with copies of recent testimonials, should be sent to the Physician-Superintendent, Brighton General Hospital, Elmgrove, Brighton, as soon as possible.

BRIGHTON. ROYAL SUSSEX COUNTY HOSPITAL. (300 Beds.)

CASUALTY HOUSE SURGEON (1 of 3). Duties include work in Orthopædic and Traumatic Unit. Vacant mid-May.

HOUSE SURGEON, mid-May.

HOUSE SURGEON (including gynæcology), end of May.

All posts recognised for pre-registration and F.R.C.S.

Applications, stating age, qualifications and experience, and naming 2 referees, to be sent to the Administrative Officer, Royal Sussex County Hospital, Brighton, 7.

BRIGHTON. ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN, Dyke-road. (130 Beds.) HOUSE PHYSICIAN and HOUSE SURGEON for 6 months from 13th June and 20th June, 1955. Posts offer wide experience in pædiatrics and are recognised for D.C.H.; post of House Surgeon is open to pre-registration candidates.

Applications, stating age, nationality, qualifications and experience, together with copies of recent testimonials, to reach the Administrative Officer by 20th May, 1955.

BRIGHTON. SUSSEX EYE HOSPITAL, Eastern-road, BRIGHTON, 7. (56 Beds.) SENIOR HOUSE SURGEON (Senior House Officer) and HOUSE SURGEON (House Officer) required immediately. Posts recognised for F.R.C.S. under 23 (b).

Applications, stating age, qualifications and experience, together with the names of 2 referees, to the Administrative Officer.

BRISTOL. HAM GREEN HOSPITAL, Pill, near BRISTOL. Applications are invited for the post of RESIDENT ASSISTANT PHYSICIAN in the Infectious Diseases Department (350 Beds) of this Hospital. The Hospital contains a major Poliomyelitis Unit, a Tuberculous Meningitis Treatment Centre and offers wide experience in acute medicine. Salary and conditions on Junior Hospital Medical Officer scale. House available. Previous experience essential.

Applications, stating age, qualifications, &c. to the Resident Physician.

BRISTOL. UNITED BRISTOL HOSPITALS. (Joint Appointment with South-Western Regional Hospital Board.) Applications are invited by the above Boards for the joint appointment of SENIOR REGISTRAR in Radiology (diagnostic). The successful applicant will be appointed to work in the first instance for 1 year in Southmead and Frenchay Hospitals.

Applications, stating age, qualifications and experience, and giving the names of 2 referees, should be sent not later than 20th May, 1955, to Secretary to the Board, Bristol Royal Infirmary, Bristol, 2.

BRISTOL. UNITED BRISTOL HOSPITALS. (Joint Appointment with South-Western Regional Hospital Board.) Applications are invited by the above Boards for the post of REGISTRAR in Radiology (diagnostic). The successful candidate will be appointed to work in the first instance for 1 year in the United Bristol Hospitals.

Applications, stating age, qualifications and experience, and giving the names of 2 referees, should be sent not later than 20th May, 1955, to Secretary to the Board, Bristol Royal Infirmary, Bristol, 2.

BOURNEMOUTH. CHRISTCHURCH HOSPITAL, CHRISTCHURCH, HANTS. BOURNEMOUTH AND EAST DORSET HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the appointment of MEDICAL REGISTRAR at the above Hospital of 289 Beds (including 61 acute medical, 34 pædiatrics, 6 chest, and 188 chronic). The Medical staff, in addition to visiting Consultants, comprises 2 Resident House Physicians and 1 Resident Pædiatric Senior House Officer. Applicants must be registered medical practitioners and the possession of a higher qualification will be considered an advantage. The post becomes vacant on 8th June, 1955, and is tenable for 1 year in the first instance. Duties will include outpatient work at the Royal Victoria Hospital, Bournemouth.

Forms of application, obtainable from the Group Secretary, Bournemouth and East Dorset Hospital Management Committee, Royal Victoria Hospital, Bournemouth, should be returned to him, duly completed, not later than Friday, 13th May.

BOURNEMOUTH. ROYAL VICTORIA HOSPITAL. (494 Beds.) BOURNEMOUTH AND EAST DORSET HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the immediate appointment of GENERAL HOUSE SURGEON. The appointment is recognised for the F.R.C.S. examination and for pre-registration purposes.

Applications to the Deputy Hospital Secretary at the Hospital.

BURY AND ROSSENDALE HOSPITAL MANAGEMENT COMMITTEE, BURY GENERAL HOSPITAL. Applications are invited for the post of JUNIOR HOSPITAL MEDICAL OFFICER in Anæsthetics (resident or non-resident). The post, which will be limited to a tenure of 4 years in the first instance, is based on Bury General Hospital, but will include duties at other hospitals in the Group, and provides wide experience. The anæsthetic staff comprises, in addition, a Consultant and a Senior Hospital Medical Officer.

Apply, stating age, qualifications, experience, and names of 2 referees, to H. WILKINSON, Group Secretary.

Bury General Hospital, Bury, Lancs.

BURY AND ROSSENDALE HOSPITAL MANAGEMENT COMMITTEE. SENIOR HOUSE OFFICER (medical), Bury General Hospital. Resident or non-resident.

Applications, giving names of 2 referees, should be made to—H. WILKINSON, Esq., Group Secretary.

Bury General Hospital, Bury, Lancs.

BURY AND ROSSENDALE HOSPITAL MANAGE-MENT COMMITTEE, BURY GENERAL HOSPITAL. Applications are invited for the post of SENIOR HOUSE OFFICER (casualty and orthopædics), this post being recognised for the F.R.C.S.

Apply, stating names of 2 referees, to—H. WILKINSON, Group Secretary.

Bury General Hospital, Walmersley-road, Bury, Lancs.

BURY ST. EDMUNDS. WEST SUFFOLK GENERAL HOSPITAL. (289 Beds.) Applications invited for the following posts:—

(*a*) SENIOR HOUSE OFFICER for orthopædic and casualty duties. Recognised for F.R.C.S. Vacant now.

(*b*) HOUSE SURGEON for general and other duties, vacant mid-May.

(*c*) HOUSE SURGEON for general surgical duties. Recognised for F.R.C.S. Vacant mid-July.

(*d*) HOUSE SURGEON for obstetric and gynæcological duties. Recognised for D.Obst.R.C.O.G. Vacant early June.

(*e*) HOUSE PHYSICIAN for pædiatric and general duties, vacant mid-June.

(*f*) HOUSE PHYSICIAN for general medical duties, vacant late May.

All posts except (*a*) recognised for pre-registration.

Inquiries to Hospital Secretary.

BURTON-ON-TRENT GENERAL HOSPITAL. (251 Beds.) RESIDENT HOUSE SURGEON required for Orthopædic Unit. Hospital recognised for F.R.C.S.

Applications to the Group Secretary.

CAERPHILLY DISTRICT MINERS' HOSPITAL. (6 miles from Cardiff.) RHYMNEY AND SIRHOWY VALLEYS HOSPITAL MANAGEMENT COMMITTEE. SENIOR HOUSE OFFICER (general surgery) required at above Hospital; 144 Beds for general surgery, orthopædics, E.N.T., ophthalmology and gynæcology; 26 Beds for general medicine. Busy Outpatients, Radiology and Pathology Departments. Married quarters available.

Apply, with full particulars, to the Group Secretary, Hospital Management Committee, St. Martin's-road, Caerphilly, Glam.

CAMBRIDGE. MATERNITY HOSPITAL. Resident OBSTETRICAL OFFICER (second or subsequent post) for 6 months from 1st July. Recognised Pre-registration Service. Recognised for M.R.C.O.G. and D.Obst.R.C.O.G. examinations.

Apply, stating age, nationality, qualifications, and experience, with dates, and copies of 3 testimonials, to Secretary, United Cambridge Hospitals, Addenbrooke's Hospital, by 21st May. Interviews 1st June.

CANTERBURY. KENT AND CANTERBURY HOS-PITAL. (276 Beds.) The post of SENIOR HOUSE PHYSICIAN becomes vacant at the end of May, 1955. Salary £745 p.a., together with National Health Service conditions.

Applications, together with copies of 2 recent testimonials, to be addressed to the Hospital Secretary at the above Hospital.

CANTERBURY. KENT AND CANTERBURY HOS-PITAL. (276 Beds.) E.N.T. AND EYE DEPARTMENTS. SENIOR HOUSE OFFICER. Salary £745 p.a. Post vacant early June, 1955. Approved for F.R.C.S. and special diplomas.

Applications, together with copies of 2 recent testimonials, to be addressed to the Hospital Secretary at the above Hospital.

CANTERBURY. KENT AND CANTERBURY HOS-PITAL. (276 Beds.) The post of GENERAL SURGICAL AND ORTHOPÆDIC HOUSE SURGEON, which is recognised for the F.R.C.S. Diploma, becomes vacant early May, 1955. National Health Service salary and conditions.

Applications, together with copies of 2 recent testimonials, to be addressed to the Hospital Secretary at the above Hospital.

CANTERBURY. KENT AND CANTERBURY HOS-PITAL. (276 Beds.) The post of PÆDIATRIC HOUSE PHYSICIAN, recognised for D.C.H., includes work in the Ward and Outpatient Department and also provides experience in the care of the newborn. Opportunities exist for study of preventive medicine among children and child guidance work. Post becomes vacant in the middle of May, 1955. National Health Service salary and conditions.

Applications, together with 2 testimonials, to be addressed to the Hospital Secretary at the above Hospital.

CANTERBURY (near). ST. AUGUSTINE'S HOSPITAL, CHARTHAM, near CANTERBURY. JUNIOR HOSPITAL MEDICAL OFFICER (Male or Female) required at this Mental Hospital. Salary scale £775–£1075 p.a. Resident accommodation available for a single person or separate accommodation for a married man. The post offers experience in all branches of psychiatry, including all forms of modern treatment and outpatients clinics. The Hospital has a high admission-rate and is recognised for the D.P.M.

Apply to the Medical Superintendent.

CASTLEFORD, NORMANTON AND DISTRICT HOS-PITAL. RESIDENT SURGICAL OFFICER required. Graded Senior House Officer. 1 years appointment, vacant 21st May. Married accommodation available.

Applications to Secretary, Gt. Northern House, Salter-row, Pontefract, Yorks.

CARDIFF. THE UNITED CARDIFF HOSPITALS. Applications are invited for the post of RESIDENT SENIOR HOUSE OFFICER in Pathology, at Llandough Hospital, Penarth, Glamorgan, to commence 1st August, 1955. This is 1 of the 2 main teaching hospitals of the United Cardiff Hospitals and the post offers experience in all branches of clinical pathology.

Application forms are available from the Secretary, United Cardiff Hospitals, Cardiff Royal Infirmary.

CARSHALTON. QUEEN MARY'S HOSPITAL FOR CHILDREN. (Acute Children's Hospital of 840 Beds.) HOUSE SURGEON (resident) required for 6 months. Applicants must have completed 12 months Pre-registration Service.

Applications, stating age, qualifications and experience, together with 3 recent testimonials, should be submitted to the Group Secretary by 13th May, 1955.

CHELMSFORD. ST. JOHN'S HOSPITAL. House SURGEON (pre-registration, first, second, or third post). Duties commencing immediately. The Hospital deals with a large number of routine and emergency cases. The post is recognised for the F.R.C.S.

Applications, stating age, nationality, qualifications, and experience, together with recent testimonials, should be sent immediately to the Secretary, Chelmsford Group Hospital Management Committee, Chelmsford and Essex Hospital, London-road, Chelmsford.

CHELTENHAM MATERNITY HOSPITAL. Cheltenham GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications are invited from registered medical practitioners for the appointment of RESIDENT OBSTETRIC OFFICER. The Hospital, which is recognised for the purpose of training for the D.Obst.R.C.O.G., has 50 beds and deals with the majority of abnormal midwifery cases in North Gloucestershire. The appointment is for a period of 6 months and the salary will be £425, £475, or £525 p.a., less £125 in respect of residential emoluments. The appointment will be vacant in early May.

Applications, stating age, qualifications and experience and accompanied by copies of 3 recent testimonials, should be sent to the Secretary, Cheltenham Group Hospital Management Committee, General Hospital, Cheltenham.

CHEPSTOW, MONMOUTHSHIRE. PLASTIC SURGERY JAW INJURIES AND BURNS CENTRE, ST. LAWRENCE HOSPITAL. (100 plastic surgery, 50 orthopædic beds.) SENIOR HOUSE OFFICER in Plastic Surgery required. Previous experience in specialty not essential. The successful candidate will receive a thorough training in plastic surgery and burns. Hospital intakes from most of Wales and provides extensive experience. There is another Senior House Officer in plastic surgery and also a Senior Hospital Officer in orthopædics. Salary £745, less £150 board-residence.

Write, quoting 2 referees, to T. A. JONES, Group Secretary. 64, Cardiff-road, Newport, Mon.

CHESTER ROYAL INFIRMARY. XIII Chester and DISTRICT HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of RESIDENT or NON-RESIDENT CASUALTY OFFICER (Junior Hospital Medical Officer). The duties of this post, which is recognised for the F.R.C.S. will include supervision of the Hand Clinic and work in the Orthopædic and Accident Departments.

Applications, together with the names and addresses of 2 referees, should be forwarded to the Group Secretary, 5, King's-buildings, Chester.

CHESTERFIELD. SCARSDALE HOSPITAL. Senior HOUSE OFFICER in Obstetrics and Gynæcology required at above Hospital. Maternity Unit of 72 Beds. Post recognised for M.R.C.O.G. and D.Obst.R.C.O.G. and vacant 10th June.

Apply M. H. BOONE, Secretary, Chesterfield Hospital Management Committee.

CHICHESTER. ROYAL WEST SUSSEX HOSPITAL. (202 acute beds.) RESIDENT HOUSE SURGEON required for 6 months appointment. National salary scale for first, second, or third posts. Post approved for pre-registration practitioners. Post recognised for F.R.C.S. 7 residents including Resident Surgical Officer and 3 House Surgeons. Vacant from 9th June or sooner.

Apply to Senior Administrative Officer.

COLCHESTER HOSPITAL MANAGEMENT COM-MITTEE. Applications are invited for :—

Essex County Hospital, Colchester (188 Beds)

SENIOR HOUSE OFFICER (Casualty and Radiotherapy). Post tenable for 6 months or 1 year. Recognised for F.R.C.S.

Clacton and District Hospital, Clacton-on-Sea (58 Beds)

SENIOR HOUSE OFFICER (Resident Surgical Officer). Post tenable for 1 year.

Applications, with copies of 3 testimonials, to the Group Secretary, 14, Pope's-lane, Colchester, Essex.

COLCHESTER HOSPITAL MANAGEMENT COM-MITTEE. Applications are invited for :—

Essex County Hospital, Colchester (188 Beds)

HOUSE OFFICER (surgical), first, second, third, or pre-registration post ; tenable for 6 months.

Black Notley Hospital, Braintree, Essex (544 Beds)

HOUSE OFFICER (orthopædic surgery), first, second, third, or pre-registration post ; tenable for 6 months. Recognised for F.R.C.S.

Applications, with copies of 3 testimonials, to Group Secretary, Colchester Hospital Management Committee, 14, Pope's-lane, Colchester, Essex.

CROYDON GENERAL HOSPITAL. (200 Beds.) Croydon GROUP HOSPITAL MANAGEMENT COMMITTEE, SOUTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD. SENIOR CASUALTY OFFICER (Registrar status), commencing 1st June, busy department. Post recognised for Final F.R.C.S. examination.

Application forms obtainable from GEORGE A. PAINES, Group Secretary, Hospital Management Committee, General Hospital, London-road, Croydon, to be returned within 14 days.

CROYDON. QUEEN'S HOSPITAL. (450 Beds.) Geri-ATRIC UNIT. CROYDON GROUP HOSPITAL MANAGEMENT COMMITTEE. SENIOR HOUSE OFFICER (resident). Post vacant as from 1st July.

Application forms obtainable from GEORGE A. PAINES, Group Secretary, Hospital Management Committee, General Hospital, London-road, Croydon, to be returned within 14 days.

CUCKFIELD HOSPITAL, Cuckfield, near Haywards HEATH, SUSSEX. MID-SUSSEX HOSPITAL MANAGEMENT COMMITTEE. HOUSE OFFICER (medical), vacant 27th May. Tenable for 6 months. Recognised for pre-registration purposes.

Applications, with details of age, experience, nationality, and naming 2 referees, to the Group Secretary at above address.

DEWSBURY. HOSPITAL MANAGEMENT COM-MITTEE NO. 11. Applications are invited for the position of SENIOR HOUSE OFFICER in Dermatology for work in the Dewsbury, Wakefield and Pontefract Groups, which will become vacant on 10th May, 1955. The position can be resident or non-resident as required. Salary and conditions of service are in accordance with national recommendations, and the post is subject to the Health Service and superannuation acts.

Applications, giving full particulars of qualifications, experience and previous posts, together with the names and addresses of 2 referees, should be addressed to the undersigned immediately.

G. W. BATCHELOR, Group Secretary.

20, Oxford-road, Dewsbury.

DORKING GENERAL HOSPITAL, Horsham-road, Dork-ING, SURREY. (234 Beds.) Applications are invited from candidates possessing previous experience for the position of SENIOR HOUSE PHYSICIAN to the Department of Medicine. The Medical Firm consists of a visiting Consultant Physician, a full-time Physician and a resident House Physician. Post vacant 4th July, 1955. The post offers wide experience in general medicine and gives an excellent opportunity for candidates studying for M.R.C.P. Salary £745 p.a., less £130 p.a. residential emoluments.

Applications, stating age, qualifications and previous experience, should be forwarded to the Medical Superintendent not later than 14th May.

DORKING GENERAL HOSPITAL, Horsham-road, DORKING. SENIOR HOUSE OFFICER (general surgery, orthopædics, and E.N.T.).

Apply, with 2 copy testimonials, to the Medical Superintendent.

DOUGLAS. NOBLE'S ISLE OF MAN HOSPITAL. (160 Beds.) Applications are invited for the post of CASUALTY OFFICER, with anæsthetic duties. House Officer grade post, recognised for Pre-registration Service, vacant immediately. 4 residents on staff. Salary £425/£475, with £125 deduction for residential emoluments. Appointment for 6 months.

Applications, enclosing copies of 2 recent testimonials, to the Secretary, Noble's Hospital, Douglas, Isle of Man.

DUDLEY, STOURBRIDGE AND DISTRICT HOSPITAL GROUP, BIRMINGHAM REGION.

The Guest Hospital, Dudley (154 Beds)

SENIOR HOUSE OFFICER (casualty). Post recognised for F.R.C.S. examination.

Wordsley Hospital, near Stourbridge (478 Beds)

SENIOR HOUSE OFFICER (anæsthetics). Resident. Previous experience house appointments essential. Experience available general surgery, gynæcology, orthopædics, plastic surgery unit.

HOUSE OFFICER (surgical) pre-registration. Apply Group Secretary, The Guest Hospital, Dudley, Worcs.

Applications, stating age, experience, with copies of 3 recent testimonials, to Group Secretary, The Guest Hospital, Dudley, Worcs.

DURHAM. UNIVERSITY OF DURHAM AND SHEFFIELD REGIONAL HOSPITAL BOARD. Joint Training Scheme for Registrars in Psychological Medicine. During May, 1955, the Board will invite applications for a limited number of REGISTRAR appointments under the above schemes. These posts form a part of the Joint Training Scheme in Psychiatry sponsored by the Newcastle and Sheffield Regional Hospital Boards, in conjunction with Durham University. The tenure will be subject to annual review and the duties will be changed periodically in order to provide varied experience, including mental deficiency. The normal period of training will be 1½–3 years according to the previous experience of the trainee and will terminate either when he obtains the Diploma in Psychological Medicine, or at the termination of his appointment as Registrar. The Regulations for the D.P.M. (Durham) require no special course of study for Part I of the examination. In order to take Part II the candidate will be given 6 months study leave with pay to attend a full-time course of instruction at Newcastle under the ægis of the Professorial Department of Psychological Medicine.

Full particulars of the scheme may be obtained from the Senior Administrative Medical Officer, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield.

EDGWARE GENERAL HOSPITAL, Edgware, Middlesex. (715 Beds.) RESIDENT PÆDIATRIC HOUSE PHYSICIAN for above Hospital. Post vacant 29th June, 1955. 6 months appointment. Post recognised for D.C.H. and pre-registration purposes.

Applications, stating age, qualifications, experience and enclosing copies of up to 3 recent testimonials, to Medical Director of Hospital by 14th May, 1955.

EDGWARE GENERAL HOSPITAL, Edgware, Middlesex. (715 Beds.) RESIDENT HOUSE SURGEON for above Hospital. Post vacant May, 1955. 6 months appointment. Post recognised for pre-registration and F.R.C.S. purposes.

Applications, stating age, qualifications, experience and enclosing copies of up to 3 recent testimonials, to Medical Director of Hospital by 14th May, 1955.

EPPING. ST. MARGARET'S HOSPITAL. (485 Beds.) RESIDENT SENIOR HOUSE OFFICER (surgery) as Casualty Officer and Orthopædic House Surgeon. Post vacant 15th May, 1955. Recognised training post for F.R.C.S. Busy general hospital with easy access to London. Salary on national scale, less deduction for board, lodging, &c.

Applications, with copies of 2 recent testimonials, to the Group Secretary, Epping Group Hospital Management Committee, St. Margaret's Hospital, Epping, Essex, immediately.

EAST ANGLIAN REGIONAL HOSPITAL BOARD. SENIOR REGISTRAR in Mental Deficiency and Child Psychiatry, Little Plumstead (near Norwich) Mental Deficiency Group of hospitals and Child Psychiatry Service. The Group (900 Beds), which is progressive and the centre for much outpatient work including child guidance clinics, is recognised as a training centre for the D.P.M. by the Conjoint Board for 1 year. House available.

Applications, stating age, experience, and names of 3 referees, to Secretary of Board, 117, Chesterton-road, Cambridge, by 16th May, 1955. Candidates invited to visit hospitals by direct arrangement with Medical Superintendent.

FARNBOROUGH HOSPITAL, Farnborough, Kent. (800 Beds.) HOUSE SURGEON required for 6 months from 13th June, 1955. Recognised for F.R.C.S. Preference given to pre-registration candidates.

Apply, stating age, qualifications with dates, and experience, and naming 3 referees, to the Administrative Officer by 31st May, 1955, quoting H.S.2.

GLASGOW, N.1. STOBHILL GENERAL HOSPITAL. PSYCHIATRIC UNIT. HOUSE OFFICERS (resident), Male or Female, required 1st August, 1955. 180 Beds, 1500 admissions yearly, acute treatable cases. Unit recognised for D.P.M.

Apply to Medical Superintendent.

GREAT YARMOUTH AND GORLESTON GENERAL HOSPITAL, DENE SIDE, GREAT YARMOUTH. HOUSE SURGEON (Male or Female) required. Post vacant 1st June, 1955. The Hospital is staffed by a Consultant General Surgeon and a Consultant E.N.T. Surgeon, and is regularly visited by Consultant staff from the Norfolk and Norwich Hospital. The post is a pre-registration post at a salary of £425, £475 or £525 p.a. according to experience, less £125 p.a. for residence. Membership of a Medical Defence Society is a condition of appointment.

Applications, stating age, qualifications and experience, with names of 2 referees, to Hospital Secretary.

GRIFFITHSTOWN, MONMOUTHSHIRE. COUNTY HOSPITAL. (253 Beds. Recognised D.Obst.R.C.O.G.) SENIOR HOUSE OFFICER in Obstetrics and Gynæcology required. Resident. Modern Maternity Unit of 32 Beds and also 14 gynæcological beds. Salary £745, less £130 board-residence.

Write, quoting 2 referees, to T. A. JONES, Group Secretary, 64, Cardiff-road, Newport, Mon.

GRIMSBY GENERAL HOSPITAL. Grimsby Hospital MANAGEMENT COMMITTEE. Applications are invited for the post now vacant, of SENIOR HOUSE OFFICER (orthopædic). Locum would be considered.

Applications, with names and addresses of 2 referees, to Hospital Secretary, Grimsby General Hospital.

HASTINGS AND ST. LEONARDS. BUCHANAN HOSPITAL. (94 Beds.) HOUSE SURGEON for Gynæcology (28 gynæcological beds). Post, vacant now for 6 months, is recognised for M.R.C.O.G. Candidates for Pre-registration Service (surgery) can be considered.

Apply, with 3 recent testimonials, to the Hospital Administrator.

HEMEL HEMPSTEAD, HERTFORDSHIRE. WEST HERTS HOSPITAL. (170 Beds.) HOUSE PHYSICIAN (pre-registration) required. Post vacant 1st June, 1955.

Applications, giving full details and names of 2 referees, should be sent to the Hospital Secretary.

HERTFORD COUNTY HOSPITAL. (171 Beds. Hospital situated 21 miles from London.) RESIDENT CASUALTY OFFICER (Senior House Officer grade) with attachment to Paediatrician and Ophthalmic Consultant. Salary £745 p.a., less £130 p.a. residential emoluments. Recognised under F.R.C.S. regulations. Appointment to commence 1st June, 1955.

Apply, with full details and references, to Group Secretary, Hertford Hospital Management Committee, County Hospital, Hertford, Herts.

HOVE GENERAL HOSPITAL, Sussex. (75 Beds—3 Resident Medical Officers.) HOUSE SURGEON AND CASUALTY OFFICER (recognised for F.R.C.S.—not pre-registration) required 1st July, 1955. Salary £525, less £125 p.a. for residential emoluments.

Applications, stating age, qualifications, experience and naming 2 referees, to the Administrative Officer, within 7 days of the appearance of this advertisement.

HOVE GENERAL HOSPITAL, Sussex. (75 Beds—3 Resident Medical Officers.) HOUSE PHYSICIAN (pre-registration) required 1st June, 1955. Excellent clinical material available. Post suitable for candidates working for higher degree. Salary £425–£525, less £125 p.a. for residential emoluments.

Applications, stating age, qualifications, full details of experience, together with names and addresses of 2 referees, to the Administrative Officer.

HUDDERSFIELD ROYAL INFIRMARY. (312 Beds.) HUDDERSFIELD HOSPITAL MANAGEMENT COMMITTEE. HOUSE SURGEON required to commence duty on 1st June, 1955. The post is recognised as a pre-registration appointment. Salary in accordance with national scale.

Applications, together with copies of 3 recent testimonials, to be addressed to the undersigned as soon as possible.

H. J. JOHNSON, Secretary to the Management Committee.
The Royal Infirmary, Huddersfield.

ILFORD. KING GEORGE HOSPITAL. There will be a vacancy for a CASUALTY OFFICER at the above Hospital on 13th June, 1955, at a salary of £745 p.a., less £145 p.a. emoluments. Senior House Officer grade. This post is recognised for the F.R.C.S.

Applications, giving full particulars and accompanied by testimonials, should be sent to the undersigned within 7 days of the appearance of this advertisement.

H. F. HARRIS, Secretary,
Ilford and Barking Group Hospital Management Committee.
King George Hospital, Ilford.

HOUNSLOW HOSPITAL, Staines-road, Hounslow, MIDDLESEX. (General Acute—81 Beds.) Applications are invited for the appointment of RESIDENT HOUSE SURGEON recognised as pre-registration post. Appointment for 6 months.

Applications, stating qualifications and age, together with copies of up to 3 recent testimonials, or names for reference, to the Hospital Secretary.

HUNTINGDON COUNTY HOSPITAL. Applications are invited for the post of HOUSE OFFICER (surgical) at this Hospital, which is approved by the licensing authority for Pre-registration Service. Post vacant immediately.

Applications, giving full particulars, and names of 2 referees, to the Group Secretary, Hospital Management Committee Offices, Newmarket General Hospital, Newmarket, Suffolk.

IPSWICH. EAST SUFFOLK AND IPSWICH HOSPITAL. (356 Beds.) Applications are invited for the post of SENIOR HOUSE SURGEON to the Fracture and Orthopædic Department. The post is graded Senior House Officer and is recognised for the F.R.C.S. examinations. The Department has 2 Consultants, about 60 Beds and a large outpatient attendance; it offers wide experience.

Applications, stating age, nationality and experience, together with copies of recent testimonials, to Hospital Secretary.

IPSWICH. EAST SUFFOLK AND IPSWICH HOSPITAL. (356 Beds.) Applications are invited for the post of HOUSE SURGEON to the General Consulting Surgeon, vacant on 22nd May, 1955. The post is recognised for pre-registration and for the F.R.C.S. examinations.

Applications, with copies of recent testimonials, to Hospital Secretary.

IPSWICH. EAST SUFFOLK AND IPSWICH HOSPITAL. EAST ANGLIAN REGIONAL HOSPITAL BOARD. SURGICAL REGISTRAR. Post recognised for F.R.C.S. Appointment for 1 year, renewable for second year.

Applications, stating age, experience, and names of 3 referees, to Secretary of Board, 117, Chesterton-road, Cambridge, by 16th May, 1955. Candidates invited to visit Hospital by direct arrangement with Hospital Management Committee Secretary at the Hospital.

ISLEWORTH. WEST MIDDLESEX HOSPITAL. South WEST MIDDLESEX HOSPITAL MANAGEMENT COMMITTEE. SENIOR HOUSE OFFICER required for Psychiatric Unit. Duties mainly in observation wards. Post recognised by Conjoint as D.P.M. training post.

Applications, stating age, nationality, qualifications and experience, with copies of up to 3 recent testimonials, to Group Secretary, West Middlesex Hospital, Isleworth, by 14th May, 1955.

ISLEWORTH. WEST MIDDLESEX HOSPITAL. North WEST METROPOLITAN REGIONAL HOSPITAL BOARD. ANÆSTHETIC REGISTRAR (non-resident except on duty nights), vacant immediately. Possession of D.A. desirable. Recognised for F.F.A.R.C.S. Department comprises 3 teams and every kind of surgical work is carried out except thoracic and neurosurgery. Post includes work at neighbouring hospitals.

Application forms obtainable from, and returnable to, Group Secretary, South West Middlesex Hospital Management Committee, West Middlesex Hospital, Isleworth, by 17th May, 1955.

LEICESTER (near). CARLTON HAYES MENTAL HOSPITAL, NARBOROUGH, LEICESTER. LEICESTER NO. 4 HOSPITAL MANAGEMENT COMMITTEE. JUNIOR HOSPITAL MEDICAL OFFICER (psychiatry) required for above Hospital (recognised for training for D.P.M.). Residential accommodation for single person (house may become available for married man).

Apply, giving age, qualifications, experience, and names of 3 referees, to Medical Superintendent immediately.

LEEDS, 7. CHAPEL ALLERTON HOSPITAL. (256 Beds.) MEDICAL REGISTRAR required for whole-time duty. National Health Service terms and conditions of service.

Detailed applications (9 copies), giving nationality, date of birth, qualifications and experience, including present appointments, and the names of 3 referees, should reach Ministry of Health, Hospital Management Branch, Norcross, Blackpool, Lancashire, by 28th May, 1955.

LEEDS, 7. CHAPEL ALLERTON HOSPITAL. (256 Beds.) REGISTRAR (general surgery and orthopædics) required for whole-time duty. National Health Service terms and conditions of service.

Detailed applications (9 copies), giving nationality, date of birth, qualifications and experience, including present appointments, and the names of 3 referees, should reach Ministry of Health, Hospital Management Branch, Norcross, Blackpool, Lancashire, by 28th May, 1955.

LEEDS, 9. ST. JAMES'S HOSPITAL (South). Leeds A GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications are invited from registered medical practitioners for the appointment of DEPUTY RESIDENT MEDICAL OFFICER (Senior House Officer), vacant approximately 1st July, 1955. The appointment will be for a period of 1 year and the salary will be in accordance with the agreed terms and conditions of service of hospital medical and dental staffs—namely, £745 p.a., with an appropriate deduction in respect of board, lodgings and other services provided.

Applications, stating age, qualifications, experience, &c., together with the names of 2 referees, to be forwarded to the undersigned as soon as possible.

J. FOLKARD, Secretary to the Committee.
Administrative Offices, St. James's Hospital, Leeds, 9.

LEEDS REGIONAL HOSPITAL BOARD. Short-term LOCUM TENENS appointments in the Registrar grade are constantly available at hospitals in the area of the Board, particularly in the specialties of anæsthetics, general medicine, general and orthopædic surgery, and psychiatry.

Interested practitioners, suitably experienced, should communicate with the Secretary, Joint Registrars Committee, Park-parade, Harrogate.

LEEDS REGIONAL HOSPITAL BOARD, Registrar posts.

General Surgery

(*a*) York A and Tadcaster Group (resident or non-resident) for duties mainly at York County and City Hospitals. Aggregate of 150 general surgical and 50 orthopædic surgery beds. Duties approximately divided between general and orthopædic surgery.

(*b*) Huddersfield Group (100 general surgical beds). (Residential accommodation available.) Duties mainly at Huddersfield Royal Infirmary.

(*c*) Hull Royal Infirmary (80 general surgical beds) and other hospitals in the Hull A Group (non-resident).

Infectious Diseases

Leeds Road Hospital, Bradford (120 I.D. beds) (resident).

Ophthalmology

(*a*) St. James's Hospital (22 eye beds—5600 new outpatients annually) and the Public Dispensary, Leeds (non-resident).

(*b*) Halifax and Bradford A Groups. Duties divided equally between Halifax Group (11 eye beds—1800 new outpatients annually) and Bradford A Group (34 eye beds—5800 new outpatients annually).

Pædiatrics

Victoria Hospital for Sick Children, Hull (150 Beds), and other general hospitals with pædiatric beds in the Hull A and the East Riding Hospital Management Committee Groups (non-resident).

Plastic Surgery

St. James's Hospital, Leeds. Special Plastic and Maxillo-facial Unit (72 Beds) (non-resident).

Psychiatry

Oulton Hall Hospital, near Wakefield, and affiliated Mental Deficiency Colonies (aggregating 780 Beds) (non-resident). Facilities for attendance at the Leeds University will be provided if the successful candidate is studying for the D.P.M.

Thoracic Surgery

Regional Thoracic Centre (56 Beds), Pinderfields General Hospital, Wakefield. Previous experience in thoracic work desirable. The beds are under the charge of the Consultants to the Teaching Hospital and the post may in future be linked with the Unit at the General Infirmary at Leeds (resident, married quarters available).

Applications, stating age, qualifications and details of present and previous appointments with dates, together with the names and addresses of 3 referees, to the Secretary, Joint Registrars Committee, Park-parade, Harrogate, by 13th May, 1955.

LEEDS. MEANWOOD PARK HOSPITAL, Tongue-lane, LEEDS, 6. (831 Beds—mental deficiency.) LEEDS (GROUP B) HOSPITAL MANAGEMENT COMMITTEE. JUNIOR HOSPITAL MEDICAL OFFICER (resident) required. Single accommodation available.

Application forms and further particulars from Medical Superintendent.

LEAMINGTON SPA. WARNEFORD GENERAL HOSPITAL. (207 Beds.) CASUALTY OFFICER (Senior House Officer), Male or Female, resident or non-resident. Post vacant 1st June, 1955, and suitable for one reading for higher qualifications, being recognised for F.R.C.S., affording contact with all Specialist Units in the Hospital.

Applications, with names and addresses of 3 referees, to Hospital Secretary.

LEAMINGTON SPA. WARNEFORD GENERAL HOSPITAL. (207 Beds.) RESIDENT HOUSE SURGEON (general surgery). Post vacant 14th June, 1955. Recognised for pre-registration and F.R.C.S. Post provides excellent experience. Good accommodation available.

Apply Hospital Secretary.

MACCLESFIELD. PARKSIDE MENTAL HOSPITAL. (1647 Beds.) Applications are invited for the post of JUNIOR HOSPITAL MEDICAL OFFICER (psychiatric). Accommodation available for a married or a single person. The appointment in the first place will be for a period of 4 years but reapplication may be made by the successful applicant at the end of this period. All forms of modern treatment are in use and the Hospital is recognised by the Conjoint Board for the purposes of the D.P.M.

Applications, with the names of 3 referees, to be sent to the Medical Superintendent.

MACCLESFIELD HOSPITAL. (301 Beds.) Macclesfield AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE. Vacancy: SENIOR HOUSE OFFICER in Medicine. Department has 56 acute beds together with some chronic sick beds; excellent opportunities available for gaining valuable experience.

Apply immediately, with full particulars and copies of recent testimonials, to Group Secretary, "Willerby House," Cumberland-street, Macclesfield.

MEDWAY AND GRAVESEND HOSPITAL MANAGEMENT COMMITTEE. ALL SAINTS' HOSPITAL, CHATHAM, and ST. BARTHOLOMEW'S HOSPITAL, ROCHESTER. Applications are invited for the resident or non-resident post of SENIOR HOUSE OFFICER in Anæsthetics (recognised for the F.F.A.R.C.S.), vacant in May and tenable for 1 year. 6 months at each hospital. Salary £745 p.a.

Applications, giving full particulars, to be addressed to the Group Secretary, 20, Star-hill, Rochester.

MERTHYR TYDFIL. ST. TYDFIL'S HOSPITAL. (376 Beds.) MERTHYR AND ABERDARE HOSPITAL MANAGEMENT COMMITTEE. Applications invited for the post of SENIOR HOUSE OFFICER (resident) in General Medicine; excellent acute medical work. 3 other Resident Medical Officers engaged. Applicants must have been registered not less than 1 year as a medical practitioner and previously have held house appointments. Salary £745 p.a., less emoluments. Ministry of Health terms and conditions of service. Appointment for 1 year in first instance.

Applications, with copies of 2 recent testimonials, to the Group Secretary, Merthyr and Aberdare Hospital Management Committee, St. Tydfil's Hospital, Merthyr Tydfil.

MIDHURST, SUSSEX. KING EDWARD VII SANATORIUM. Applications are invited from registered medical practitioners for the appointment of ASSISTANT MEDICAL OFFICER. Candidates should have had at least 6 months experience of tuberculous and non-tuberculous chest diseases. Commencing salary £625 p.a. in addition to full residential emoluments. The post is superannuable.

Applications, with full particulars of age, qualifications and experience, and the names of 3 referees, should be sent to the Medical Superintendent "A."

Applications are also invited for a LOCUM TENENS immediately and for 4 months. Conditions, salary, &c., as for the above.

MITCHAM. CUMBERLAND HOSPITAL, Whitford-gardens, MITCHAM, SURREY. (100 Beds.) Applications are invited for the post of MEDICAL OFFICER (Registrar in Tuberculosis), resident or non-resident if within 5-mile radius of Hospital. Duties also in Thoracic Unit, St. Helier Hospital. Experience in specialty essential. Post vacant mid-June.

Forms of application returnable by 21st May, obtainable from the Group Secretary, St. Helier Hospital, Carshalton, Surrey.

MITCHAM. WILSON HOSPITAL, Cranmer-road, MITCHAM, SURREY. RESIDENT HOUSE PHYSICIAN (not pre-registration), vacant end May.

Applications, stating age, qualifications, and experience, with copies of recent testimonials and the name of 1 referee, should be sent to the Secretary at above address.

MAIDSTONE. KENT COUNTY OPHTHALMIC AND AURAL HOSPITAL. (113 Beds.) MID-KENT HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the appointment of SENIOR HOUSE SURGEON in the E.N.T. Department of the above Hospital. Post now vacant. There are 55 E.N.T. beds and 6 specialist operating sessions each week. Valuable experience is available, and the post is recognised for the purpose of the F.R.C.S. and the D.L.O. Salary will be £745 a year, less £150 a year for residential emoluments.

Applications immediately to the Administrative Officer, Kent County Ophthalmic and Aural Hospital, Maidstone, Kent.

MANCHESTER. UNITED MANCHESTER HOSPITALS. MANCHESTER ROYAL EYE HOSPITAL. Applications are invited for SENIOR HOUSE OFFICER post. Salary £745 p.a., less £155 p.a. for residential emoluments.

Application forms may be obtained from the undersigned.

H. R. NORTH, General Superintendent.

MANCHESTER. UNITED MANCHESTER HOSPITALS. SAINT MARY'S HOSPITALS, MANCHESTER. Applications are invited for 3 posts of HOUSE OFFICER in Gynæcology. Applicants must have had previous hospital experience in medicine and surgery. The posts are recognised for the purposes of the M.R.C.O.G. examination. The appointment is for 6 months starting 1st July, 1955. Salary in accordance with national scale.

Application forms may be obtained from the undersigned and returned not later than 16th May, 1955.

A. R. WISE, General Superintendent.

Saint Mary's Hospitals, Whitworth Park, Manchester, 13.

MANCHESTER. WEST MANCHESTER HOSPITAL MANAGEMENT COMMITTEE. PARK HOSPITAL, DAVYHULME. (General Hospital—433 Beds.)

1 SENIOR HOUSE OFFICER (non-tuberculous thoracic surgery) for Manchester Regional Hospital Board Centre, vacant mid-May.

1 HOUSE OFFICER (general surgery), pre-registration. Post recognised for F.R.C.S. examination. Post now vacant.

Forms from Secretary.

MANCHESTER REGIONAL HOSPITAL BOARD. Salford HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of NON-RESIDENT REGISTRAR to the Neurosurgical Department at Salford Royal Hospital and the Royal Manchester Children's Hospital. In addition to adult work, the post offers exceptional opportunities for experience in pædiatric neurosurgery.

Applications to the Group Secretary, Salford Royal Hospital, Salford, 3, before 14th May, 1955.

MANCHESTER REGIONAL HOSPITAL BOARD. Applications are invited for the post of REGISTRAR in Psychiatry at Whittingham Hospital. Comfortable furnished quarters are available with full residential emoluments at a charge of £140 p.a.

Applications, endorsed "Medical Officer," giving details of experience and names and addresses of 3 referees, to be addressed to the Chairman, Whittingham Hospital, near Preston, and be received as soon as possible.

MANCHESTER REGIONAL HOSPITAL BOARD invite applications for the post of Whole-time RESIDENT SURGICAL REGISTRAR to the West Manchester Hospital Management Committee. Primarily for duty at Park Hospital, Davyhulme, but with duties at other Group Hospitals. Post now vacant. 12 months appointment subject to renewal.

Forms from Secretary, Park Hospital, Davyhulme.

MANCHESTER REGIONAL HOSPITAL BOARD invite applications for the post of Whole-time REGISTRAR in General Medicine to the West Manchester Hospital Management Committee. Primarily for duty at Park Hospital, Davyhulme, but with duties at other Group Hospitals. Post vacant 30th June, 1955. 12 months appointment in first instance.

Forms from Secretary, Park Hospital, Davyhulme.

MANCHESTER REGIONAL HOSPITAL BOARD invite applications for the non-resident post of REGISTRAR to the E.N.T. Department of the Stockport and Buxton Hospital Management Committee. The main duties will be at Stockport Infirmary with some duties at other hospitals in the Group.

Applications, stating age, experience and qualifications, together with the names of 2 referees, to be forwarded to the undersigned, immediately.

H. G. PRICE, Group Secretary.

59B, Shaw-heath, Stockport, Cheshire.

MANCHESTER REGIONAL HOSPITAL BOARD. South MANCHESTER HOSPITAL MANAGEMENT COMMITTEE. The Board invite applications from registered practitioners for the post of REGISTRAR in Plastic Surgery at the Wythenshawe Hospital, which is a General Hospital with 75 plastic surgery beds.

Applications, stating age, qualifications, present post, and names of 2 referees, to be forwarded to the Group Secretary, Withington Hospital, Manchester, 20, immediately.

NEWMARKET GENERAL HOSPITAL, Newmarket. Applications invited for the post, now vacant, of SENIOR HOUSE OFFICER, for orthopædic and casualty duties.

Applications, with 3 testimonials, to the Physician-Superintendent.

NEWPORT, MONMOUTHSHIRE. ST. WOOLOS HOS-PITAL. (379 Beds.) SENIOR HOUSE OFFICER (general surgery) required, non-resident. The post is of a senior character, covering 56 Beds with the Consultant (engaged solely here) and a House Surgeon. Good opportunity for further practical experience.

Write, quoting 2 referees, to T. A. JONES, Group Secretary. 64, Cardiff-road, Newport, Mon.

NORTH EAST METROPOLITAN REGIONAL HOS-PITAL BOARD.

SENIOR REGISTRAR in Mental Deficiency (House or single quarters available). Royal Eastern Counties Hospital, Colchester, Essex (1700 Beds). Candidates must hold D.P.M. or equivalent. Full opportunities for experience and instruction in all aspects of mental deficiency. A proportion of duties will be in the hospital's fully equipped Research Department (Director: Dr. J. A. Fraser-Roberts). Further particulars on application. 4 years appointment, subject to annual review.

Applications in triplicate, with names of 2 referees, to Secretary, North East Metropolitan Regional Hospital Board, 11A, Portland-place, W.1, by 21st May, 1955.

NORTH WEST METROPOLITAN REGIONAL HOS-PITAL BOARD. SENIOR MEDICAL REGISTRAR, Harefield Hospital, Middlesex (446 Beds for the treatment of pulmonary tuberculosis and a Thoracic Surgical Unit of 78 Beds) and Uxbridge Chest Clinic with which are associated 60 Beds for the treatment of pulmonary tuberculosis. The post will be held for the first 2 years at Harefield Hospital and thereafter at Uxbridge Chest Clinic. Candidates should have good general medical experience with special experience in the treatment of tuberculosis.

Application forms obtainable from, and returnable to, Group Secretary, Harefield and Northwood Group Hospital Management Committee, Mount Vernon Hospital, Northwood, Middlesex, by 17th May, 1955.

NORTHWOOD, MIDDLESEX. MOUNT VERNON HOSPITAL. Applications are invited for the post of HOUSE SURGEON for general surgery and urology, vacant 1st June. Recognised for the Final F.R.C.S. in General Surgery, and recognised as a pre-registration appointment.

Applications, accompanied by 2 testimonials, to be forwarded to the Resident Medical Officer by 24th May, 1955.

NORTHWOOD, MIDDLESEX. MOUNT VERNON HOSPITAL. Applications are invited for the post of HOUSE PHYSICIAN to the Radiotherapy Department, vacant 1st June. This post is recognised as a pre-registration appointment.

Applications, accompanied by 2 testimonials, to be forwarded to the Resident Medical Officer by 24th May, 1955.

NOTTINGHAM GENERAL HOSPITAL. Senior Surgical HOUSE OFFICER required at the above Hospital. Good opportunity of obtaining operating experience in general surgery. Recognised for the F.R.C.S. Duties to commence as soon as possible.

Applications, stating age, qualifications and experience, together with copies of testimonials, to be sent to the Group Secretary, General Hospital, Nottingham.

NOTTINGHAM GENERAL HOSPITAL. Hogarth Radio-THERAPY CENTRE. A vacancy exists at the above Centre for a SENIOR HOUSE OFFICER in Radiotherapy or REGISTRAR (if in possession of Part I, D.M.R.T.) in Radiotherapy. The Centre is recognised as a Training School for both Part I and II D.M.R.T. (Royal Colleges of London) in conjunction with the University of Nottingham, and instruction for this examination can be given to those interested and suitable. The position offers excellent experience for persons studying for other post-graduate degrees.

Apply as soon as possible, stating age, qualifications and experience, together with names of 3 referees, to the Group Secretary, General Hospital, Nottingham.

NOTTINGHAM GENERAL HOSPITAL. (441 Beds.) SHEFFIELD REGIONAL HOSPITAL BOARD. Whole-time RESIDENT or NON-RESIDENT ORTHOPÆDIC AND FRACTURE REGISTRAR required. The post offers exceptional experience in traumatic surgery. Appointment for 1 year in first instance.

Apply to Secretary, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield, by 16th May, 1955, giving age, nationality, qualifications, present and previous appointments with dates, naming 3 referees.

ORPINGTON HOSPITAL, Orpington, Kent. Resident CASUALTY OFFICER (Senior House Officer grade) required 1st July, 1955, for above 813-Bedded General Hospital. Post recognised for F.R.C.S.

Apply Physician-Superintendent.

OXFORD REGIONAL HOSPITAL BOARD. Applications are invited for the whole-time non-resident post of REGISTRAR in E.N.T. Surgery to the hospitals of the Aylesbury/High Wycombe area. The post is recognised for the D.L.O. and F.R.C.S. The appointment will be for 1 year and eligible for extension to a second year.

Applications on forms obtainable from the Secretary, Registrar Committee, 43, Banbury-road, Oxford, should reach him by 21st May.

OXFORD. LITTLEMORE (MENTAL) HOSPITAL. Applications invited for the post of SENIOR HOUSE OFFICER. Previous experience as House Surgeon or Physician essential. Previous psychiatric experience unnecessary. The Physician appointed will work primarily in the Insulin Therapy Clinic and with a Senior Consultant at outpatient clinics. There are ample facilities for postgraduate study in a teaching general hospital. Salary £745 p.a.

Apply Physician-Superintendent.

OXFORD. UNITED OXFORD HOSPITALS. Applications invited for post of HOUSE SURGEON to the Accident Service, Radcliffe Infirmary, for 6 months with effect from 1st June, 1955 (45 Beds). Duties include 2 months head injuries, 2 months male and 2 months female and children's ward, in addition to Casualty Department.

Apply, stating age, qualifications and experience, together with names of 2 referees, to Administrator, Radcliffe Infirmary, Oxford, by 13th May, 1955.

OTLEY, YORKSHIRE. THE GENERAL HOSPITAL. Applications are invited from registered medical practitioners for the post of SENIOR HOUSE OFFICER in General and Orthopædic Surgery. 50 surgical beds in a 170-Bedded hospital with full Consultant staff who are members of the Teaching staff of Leeds University. Duties to commence as soon as possible.

Applications, stating full particulars of age, nationality and experience, together with the names of 2 referees, to the undersigned as soon as possible.

E. W. BEST, Group Secretary,
Ilkley and Otley Hospital Management Committee.

PORTSMOUTH GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the following appointment:—

Saint Mary's Hospital (700 Beds)

JUNIOR HOSPITAL MEDICAL OFFICER (resident—married or single quarters) wanted at once for duties as follows:—

General supervision of the staff of House Officers. Responsibility for advising on clinical aspects of the Emergency Bed Service. Medical Officer for 2 mental wards (172 Beds). Casualty Officer for a small Casualty Department and such other medical duties as may be defined from time to time.

The successful applicant will be free to act as General Practitioner for the resident nursing staff and to retain their capitation fees. He will be expected to work under the direction of the Senior Medical and Surgical staff and to keep close liaison with the Hospital Secretary, who will be responsible for the general administration of the Hospital. The appointment, in the first instance, will be for a period of 3 years.

Applications, stating age, experience and qualifications, together with names of 2 referees, should be forwarded as soon as possible to L. C. ROGERS, Acting Group Secretary.

35, Grove-road South, Southsea.

PORTSMOUTH GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the following appointments:—

Saint Mary's Hospital

HOUSE SURGEON (20 general surgical beds, 20 thoracic beds, 10 radiotherapy beds), pre-registration, vacant now.

Queen Alexandra Hospital

HOUSE PHYSICIAN (62 Beds), pre-registration post, vacant 29th June, 1955.

Royal Portsmouth Hospital

HOUSE PHYSICIAN (65 Beds), pre-registration post, vacant 1st July, 1955.

Applications, stating age, experience and qualifications, together with names of 2 referees, should be forwarded as soon as possible to L. C. ROGERS.

35, Grove-road South, Southsea.

PORTSMOUTH GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the following appointment:—

Queen Alexandra Hospital, Cosham

Full-time NON-RESIDENT JUNIOR HOSPITAL MEDICAL OFFICER (dermatology—24 Beds). The appointment includes outpatient duties at other hospitals.

Applications, stating age, experience and qualifications, together with names of 2 referees, should be forwarded as soon as possible to L. C. ROGERS.

35, Grove-road South, Southsea.

PORTSMOUTH GROUP HOSPITAL MANAGEMENT COMMITTEE. SOUTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD. Applications are invited for the post, vacant 16th July, 1955, of NON-RESIDENT OPHTHALMIC REGISTRAR at the Portsmouth Eye and Ear Hospital with (rarely) duties at other hospitals in the Group. Preference will be given to candidates holding a specialist qualification.

Forms of application may be obtained from the Acting Group Secretary, Portsmouth Group Hospital Management Committee, 35, Grove-road South, Southsea, which should be returned to him duly completed on or before 16th May, 1955. Canvassing will disqualify, but it is hoped that candidates will visit the Hospital by arrangement with the Acting Group Secretary.

PLYMOUTH. SOUTH DEVON AND EAST CORNWALL HOSPITAL.

SENIOR HOUSE OFFICER in Anæsthetics, vacant 1st July, 1955, Freedom Fields Section.

PÆDIATRIC HOUSE PHYSICIAN, vacant 2nd July, 1955, Freedom Fields Section. Recognised for the D.C.H.

HOUSE SURGEONS (pre-registration posts), vacancies 1st May, 1st June, and 1st July, 1955. Recognised for the F.R.C.S. Freedom Fields Section, also Greenbank Road Section.

HOUSE OFFICER in Obstetrics, vacant 2nd June, 1955, at the Alexandra Maternity Home, Devonport.

Applications, stating age, nationality, qualifications and experience, with names of 3 referees, to be sent to—

ARTHUR R. CASH, Group Secretary, Plymouth,
South Devon and East Cornwall General Hospital Group.
7, Nelson-gardens, Stoke, Plymouth.

PLYMOUTH. SOUTH DEVON AND EAST CORNWALL HOSPITAL. DEPARTMENT OF OBSTETRICS AND GYNÆCOLOGY. HOUSE OFFICER in Obstetrics and Gynæcology, vacant 1st July, 1955. Recognised for the Membership of the Royal College of Obstetricians and Gynæcologists. Wide experience can be obtained in obstetrics, including antenatal and post-natal clinics.

Applications, stating age, nationality, qualifications and experience, with names of 3 referees, to be sent to—

ARTHUR R. CASH, Group Secretary, Plymouth,
South Devon and East Cornwall General Hospital Group.
7, Nelson-gardens, Stoke, Plymouth.

PLYMOUTH CLINICAL AREA. South-Western Regional HOSPITAL BOARD. Applications are invited from Registered Medical Practitioners in general practice to undertake 1 weekly session in anæsthetics at Tavistock Hospital, South Devon. Previous experience in anæsthetics is essential. Payment will be at the rate of £175 p.a. per weekly 3½-hour session.

Applications, stating date of birth, qualifications, and experience, together with the names and addresses of 2 referees, should be sent to the Secretary of the Regional Hospital Board, 27, Tyndalls Park-road, Bristol, 8, not later than 21st May, 1955.

PONTYPRIDD (near). EAST GLAMORGAN HOSPITAL, CHURCH VILLAGE. (316 Beds and large Outpatient Department. Committee's Base Hospital serving population of 174,000.—Recognised for Membership and D.Obst.R.C.O.G., F.R.C.S., D.C.H., F.F.A.R.C.S., D.A.). PONTYPRIDD AND RHONDDA HOSPITAL MANAGEMENT COMMITTEE. SENIOR HOUSE OFFICER (obstetrics and gynæcology) (to include duties at the Llwynypia Hospital).

Applications, stating age, qualifications and experience, together with copies of 2 recent testimonials, to be sent to the Group Secretary, Courthouse-street, Pontypridd.

POOLE GENERAL HOSPITAL, Poole, Dorset. (319 Beds.) BOURNEMOUTH AND EAST DORSET HOSPITAL MANAGEMENT COMMITTEE. 2 HOUSE SURGEONS (pre-registration), required. 1 post vacant 19th May, 1955, and the other 16th June, 1955. The Hospital is recognised for the F.R.C.S. and F.R.C.S.E.

Applications to the Hospital Secretary.

PENZANCE. WEST CORNWALL HOSPITAL. West CORNWALL HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of HOUSE PHYSICIAN, to commence duty on 16th May, 1955. Recognised as Pre-registration post.

Applications to the Hospital Secretary.

PERTH ROYAL INFIRMARY. Locum House Officer required for Outpatient Department (House Surgeon or Senior House Surgeon grade, according to experience).

Applications, with names of 2 referees, should be sent to the Group Medical Superintendent, Perth Royal Infirmary, Perth.

REDHILL AND CROYDON GROUP HOSPITAL MANAGEMENT COMMITTEES. SOUTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD. REGISTRAR in Chest Medicine. Assistant to Consultant Chest Physician in Redhill and Purley Chest Clinic areas with combined population of 205,700 and combined register of 1000. Post becomes vacant on 23rd June, 1955. The work includes clinic and hospital duties (49 beds) and also preventive work under Local Authority schemes. Applicants may visit Redhill clinic by arrangement with Consultant.

Apply to Group Secretary, Redhill Group Hospital Management Committee, Earlswood Mount, Pendleton-road, Redhill, Surrey.

REDHILL. EAST SURREY HOSPITAL, Shrewsbury-road. (139 Beds.) HOUSE SURGEON (Male) required—pre-registration post.

Apply to the Hospital Secretary.

REDHILL COUNTY HOSPITAL, Earlswood Common, REDHILL. SENIOR HOUSE OFFICER (anæsthetics), resident appointment. Recognised for D.A. Vacant June.

Apply Group Secretary, Redhill Group Hospital Management Committee, Earlswood Mount, Pendleton-road, Redhill, Surrey (Redhill 3581. Ext. 20).

RICHMOND, SURREY. ROYAL HOSPITAL. (General Hospital—121 Beds.) CASUALTY OFFICER required. Senior House Officer grade. Non-resident. Post vacant 1st July, 1955.

Applications to Administrative Officer.

RICHMOND, SURREY. ROYAL HOSPITAL. (General Hospital—121 Beds.) HOUSE PHYSICIAN (pre-registration) required. Post vacant 3rd June, 1955.

Applications to Administrative Officer.

RICHMOND, SURREY. ROYAL HOSPITAL. (General Hospital—121 Beds.) HOUSE SURGEON (pre-registration) required. Post vacant 20th June, 1955.

Applications to Administrative Officer.

ROCHDALE AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE. HOUSE SURGEONS (pre-registration) required May at Rochdale Infirmary (2) and Birch Hill Hospital (1).

Written applications to be sent as soon as possible to Group Secretary, Central Offices, Birch Hill Hospital, Rochdale, giving names and addresses of 2 referees.

ROMFORD, ESSEX. VICTORIA HOSPITAL. (99 Beds.) RESIDENT HOUSE SURGEON (Male) required. (Post not approved for pre-registration purposes.)

Applications should be forwarded immediately to the Secretary, Romford Group Hospital Management Committee, Oldchurch Hospital, Romford.

SCOTLAND. NORTH-EASTERN REGIONAL HOSPITAL BOARD. Applications are invited for the appointment of SENIOR REGISTRAR in General Surgery on the staff of the Aberdeen General Hospitals and also with duties at peripheral hospitals. If a time-expired Senior Registrar is appointed the post would be regarded as a transitional Senior Registrar appointment and would be tenable until December, 1956.

Applications, giving 2 names for reference, should be submitted by 18th May, 1955, to the Secretary, 1, Albyn-place, Aberdeen, from whom further particulars may be obtained.

SCOTLAND. SOUTH-EASTERN REGIONAL HOSPITAL BOARD. Applications are invited for the post of REGISTRAR in Surgery at Bangour Hospital, Broxburn.

Applications, giving particulars of age, experience and qualifications together with the names of 2 referees, should be submitted to the Secretary, South-Eastern Regional Hospital Board, Scotland, 11, Drumsheugh-gardens, Edinburgh, 3, by 28th May, 1955.

SCOTLAND. TOR-NA-DEE AND GLEN O'DEE SANATORIA. (176 Beds.) Applications are invited for the resident post of REGISTRAR in Chest Diseases. A Thoracic Surgery Unit is located at Tor-Na-Dee and the appointment offers valuable training in the assessment and selection of cases for major chest surgery and in their pre-operative and post-operative management.

Applications, together with the names and addresses of 2 referees, should be sent to the Secretary, Board of Management, Aberdeen Special Hospitals, 6, Queen's-terrace, Aberdeen, as soon as possible after the appearance of this advertisement.

SCOTLAND. WESTERN REGIONAL HOSPITAL BOARD. Applications are invited for the following appointments, which will be for 1 year in the first instance :—

SENIOR REGISTRAR in Psychiatry at Crichton Royal Mental Hospital, Dumfries.

REGISTRAR in Pathology based at the Southern General Hospital, Glasgow.

REGISTRAR in E.N.T. Surgery based at the Royal Infirmary, Glasgow.

These appointments are subject to the National Health Service (Scotland) superannuation regulations.

Applications (12 copies), stating date of birth, qualifications, experience, present appointment, and the names of 3 referees, to reach the Secretary, Western Regional Hospital Board, 64, West Regent-street, Glasgow, by 28th May, 1955.

SALFORD, 6, LANCASHIRE. HOPE HOSPITAL. Salford HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of RESIDENT CLINICAL PATHOLOGIST (Senior House Officer grade) in the Group Laboratory, Hope Hospital, which is approved for the Diploma in Pathology.

Applications, stating age, qualifications, and experience, together with the names and addresses of 2 referees, should be addressed to the Hospital Secretary.

SALISBURY GENERAL HOSPITAL. Salisbury Group HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of RESIDENT HOUSE SURGEON (Orthopædic Department) which is open to pre-registration candidates, and which becomes vacant immediately. The Department has 35 Beds and a large outpatient turnover.

Applications, stating age, nationality, qualifications, experience, and naming 2 referees, to the Group Secretary, Odstock Hospital, Salisbury.

SHEFFIELD. CITY GENERAL HOSPITAL. (894 Beds. Recognised for Final Fellowship examination.) SHEFFIELD REGIONAL HOSPITAL BOARD. Whole-time RESIDENT REGISTRAR (thoracic surgery) required. Appointment for 1 year in first instance. General Hospital with Regional Department of Cardiology. Thoracic Surgical Unit deals with Tuberculous and non-tuberculous cases. Previous surgical experience desirable.

Apply to Secretary, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield, by 16th May, 1955, giving age, nationality, qualifications, present and previous appointments with dates, naming 3 referees.

SHEFFIELD REGIONAL HOSPITAL BOARD. Whole-time SENIOR REGISTRAR in Psychiatry required for Middlewood Hospital, Sheffield (2089 Beds). D.P.M. essential. House available. Appointment for 1 year in the first instance, reviewable annually. Opportunity for research and experience in the special branches of psychiatry available in the Hospital area.

Application forms and further details obtainable from Senior Administrative Medical Officer, Sheffield Regional Hospital Board Old Fulwood-road, Sheffield, Forms to be returned by 16th May, 1955.

SHEFFIELD. THE UNITED SHEFFIELD HOSPITALS. CHILDREN'S HOSPITAL UNIT. Applications are invited for the post of MEDICAL REGISTRAR (normally resident) at the above Hospital, vacant 19th June. Inpatient and outpatient responsibilities. Full opportunities to attend clinical conferences in this and associated hospitals.

Applications, stating age, qualifications and experience, with the names of 3 referees, should be sent not later than 20th May, 1955, to the Chief Administrative Officer, The United Sheffield Hospitals, West-street, Sheffield, 1.

SHEFFIELD. THE UNITED SHEFFIELD HOSPITALS. CHILDREN'S HOSPITAL UNIT. Applications invited for a RESIDENT REGISTRAR to the Pædiatric Professorial Unit at the above Hospital. Required for period commencing 17th June, 1955, and ending on 31st July, 1956. Successful candidates may be required to work in the Neonatal Department of the Jessop Hospital for Women.

Applications, stating age, qualifications and experience, with the names of 3 referees, should be sent not later than 10th May, 1955, to the Chief Administrative Officer, The United Sheffield Hospitals, West-street, Sheffield, 1.

SHREWSBURY. EYE, EAR AND THROAT HOSPITAL. SHREWSBURY HOSPITAL GROUP. SENIOR HOUSE OFFICER (E.N.T.), vacant 1st August, 1955. Duties at E.N.T. Hospital (68 Beds) and Copthorne Hospital (168 Beds). Post recognised for the D.L.O.R.C.S.

Applications, with copy testimonials, to the Group Secretary, Royal Salop Infirmary, Shrewsbury.

SHREWSBURY HOSPITAL GROUP. House Surgeon for general surgical duties (pre-registration post), vacant 16th May, 1955.

Applications with copy testimonials to Group Secretary, Royal Salop Infirmary, Shrewsbury.

SHREWSBURY. ROYAL SALOP INFIRMARY, CHILDREN'S UNIT. SHREWSBURY HOSPITAL GROUP. SENIOR HOUSE OFFICER or HOUSE OFFICER (pædiatric), vacant 28th May, 1955. The Unit consists of medical, surgical and fever beds.

Applications, with copy testimonials, to Group Secretary, Royal Salop Infirmary, Shrewsbury.

SLOUGH, BUCKINGHAMSHIRE. UPTON HOSPITAL. WINDSOR GROUP HOSPITAL MANAGEMENT COMMITTEE. HOUSE SURGEON required, pre-registration post, vacant 1st June.

Applications, stating age and qualifications, to Hospital Secretary, before 12th May.

SLOUGH, BUCKINGHAMSHIRE. UPTON HOSPITAL. Locum HOUSE OFFICER (casualty) required immediately.

Applications, stating age and qualifications, together with 2 testimonials, to Hospital Secretary.

SOUTHAMPTON CHEST HOSPITAL. (261 Beds.) SENIOR HOUSE OFFICER required from 3rd June, to be responsible for Infectious Diseases Unit. The duties are such as to suit a candidate reading for higher examinations. The Unit is sited at a Hospital possessing up-to-date tuberculosis and thoracic surgical units, whilst the Southampton Group of hospitals as a whole affords excellent opportunities for study and experience in all branches of medicine.

Applications, together with copies of recent testimonials, should be forwarded as soon as possible to the Group Secretary, Southampton Group Hospital Management Committee, Bullar-street, Southampton.

SOUTHAMPTON EYE HOSPITAL. (32 Beds. Recognised for the D.O. Examination.) RESIDENT SENIOR HOUSE OFFICER required immediately.

Applications, with copies of testimonials, should be forwarded as soon as possible to the Secretary, Southampton Group Hospital Management Committee, Bullar-street, Southampton.

SOUTHAMPTON. ROYAL SOUTH HANTS HOSPITAL. (278 Beds. Recognised for F.R.C.S.) RESIDENT HOUSE SURGEON required about 6th June. Pre-registration candidates eligible.

Applications, with copies of testimonials, should be forwarded to the Group Secretary, Southampton Group Hospital Management Committee, Bullar-street, Southampton, as soon as possible.

SOUTHAMPTON. ROYAL SOUTH HANTS HOSPITAL. (278 Beds) AND SOUTHAMPTON GENERAL HOSPITAL (471 Beds). SENIOR HOUSE OFFICER (E.N.T.) required from 9th June. This post is recognised for the F.R.C.S. (Eng.) and D.L.O. examinations and provides experience in all branches of E.N.T. work, including audiometry. The Group includes a diagnostic and distributing hearing-aid centre.

Applications, with copies of recent testimonials, should be forwarded as soon as possible to the Secretary, Southampton Group Hospital Management Committee, Bullar-street, Southampton.

STOKE-ON-TRENT. NORTH STAFFORDSHIRE ROYAL INFIRMARY. SENIOR HOUSE OFFICER (of ophthalmology) required. Recognised F.R.C.S. and D.O.

Applications to Group Secretary, Hospital Management Committee, Princes-road, Stoke-on-Trent.

STOKE-ON-TRENT. NORTH STAFFORDSHIRE ROYAL INFIRMARY. (455 Beds.) SENIOR HOUSE OFFICER in Orthopædics, vacant shortly.

Applications (2 references) to Group Secretary, Hospital Management Committee, Princes-road, Stoke-on-Trent.

STOKE-ON-TRENT. NORTH STAFFORDSHIRE ROYAL INFIRMARY. (455 Beds.) SENIOR HOUSE OFFICER (E.N.T.), vacant now.

Applications (2 references) to Group Secretary, Hospital Management Committee, Princes-road, Stoke-on-Trent.

SWANSEA HOSPITAL, Swansea. Glantawe Hospital MANAGEMENT COMMITTEE. Registered medical practitioners are invited to apply for the appointment of SENIOR HOUSE OFFICER in the Ophthalmic Department of the above Hospital. The post is recognised for the F.R.C.S. (Eng.) and D.O. examinations.

Applications, stating age, qualifications and experience, should be addressed to the Hospital Secretary.

SWINDON AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE. SWINDON HOSPITAL GROUP (520 Beds.) Applications are invited for the posts of 2 RESIDENT HOUSE SURGEONS for General Surgical Unit (80 Beds). Posts recognised for F.R.C.S. and training under pre-registration internship regulations, and are vacant on 1st July and 3rd August, 1955. Married accommodation available.

Full details, together with copies of 3 recent testimonials, to Secretary, 7, Okus-road, Swindon, Wilts, as soon as possible.

SWINDON AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE. SWINDON HOSPITALS. (520 Beds.) Applications are invited for the posts of 2 RESIDENT HOUSE PHYSICIANS in acute Medical Unit of 64 Beds at St. Margaret's Hospital. Posts recognised for training under pre-registration internship regulations, and are vacant on 29th June and 24th July, 1955.

Full details, together with copies of 3 recent testimonials, to Secretary, 7 Okus-road, Swindon, Wilts, as soon as possible.

SWINDON HOSPITAL GROUP. (507 Beds.) Applications are invited for the appointment of RESIDENT CASUALTY AND ORTHOPÆDIC OFFICER (Senior House Officer grade, £745 p.a.) at Great Western Hospital, Swindon. Post recognised by R.C.S. for 6 months of years training under Fellowship regulations. Work of Accident and Orthopædic Department, associated with Wingfield-Morris Orthopædic Hospital, Oxford, includes large number of industrial injuries. Residential emoluments £145 p.a.

Full details, with copies of 3 recent testimonials, to Secretary, 7, Okus-road, Swindon, as soon as possible.

SULLY HOSPITAL, Sully, Penarth, Glamorganshire. CARDIFF HOSPITAL MANAGEMENT COMMITTEE. SENIOR HOUSE OFFICER (surgical) required at above Hospital commencing 1st August, 1955. Experience available in investigation and treatment of all lung and heart diseases in adults and children.

Form of application from Group Secretary, 44, Cathedral-road, Cardiff.

SOUTHEND-ON-SEA GENERAL HOSPITAL. Applications are invited for the post of RESIDENT SENIOR HOUSE OFFICER (surgical). Post vacant 29th May, 1955. Recognised for F.R.C.S.

Applications, stating age, qualifications, and experience, with copies of recent testimonials, should reach the undersigned at the Hospital by 14th May, 1955. J. C. FIELD, Secretary.

TAPLOW, near MAIDENHEAD. CANADIAN RED CROSS MEMORIAL HOSPITAL. OBSTETRICAL AND GYNÆCOLOGICAL REGISTRAR required at above Hospital. Post recognised for M.R.C.O.G. Hospital may be visited by direct appointment.

Application forms obtainable from, and returnable to, Group Secretary, Windsor Group Hospital Management Committee, Alma-road, Windsor, by 13th May.

WAKEFIELD. PINDERFIELDS GENERAL HOSPITAL. Applications invited for positions of SENIOR HOUSE OFFICERS or Locum Tenens SENIOR HOUSE OFFICERS in the General Surgical, Thoracic Surgical and Orthopædic Departments, vacant from 1st May, 1955. Salary for Senior House Officers will be £745 p.a. For the Locum Tenens appointments payment will be at the rate of £14 10s. a week. In all cases a charge of £155 p.a. will be made for residential accommodation.

Address written applications, giving full personal particulars, details of experience, &c., together with 2 names and addresses for reference, to W. BOWRING, Group Secretary.

Victoria Chambers, Wood-street, Wakefield.

WATFORD. HERTFORDSHIRE. PEACE MEMORIAL HOSPITAL. (198 Beds.) Applications are invited for the post of HOUSE SURGEON at the above Hospital. This is a pre-registration post. Salary according to the National Health Service scale.

Applications, with copies of recent testimonials, to the Administrator.

WATFORD, HERTFORDSHIRE. PEACE MEMORIAL HOSPITAL. (198 Beds.) Applications are invited for the pre-registration post of CASUALTY AND ORTHOPÆDIC HOUSE SURGEON. Salary according to National Health Service scale.

Applications, with copies of 2 testimonials, to the Administrator.

WELLS, SOMERSET. MENDIP HOSPITAL. Applications are invited for the appointment of RESIDENT JUNIOR HOSPITAL MEDICAL OFFICER to the above Mental Hospital. Salary and conditions of service in accordance with the Whitley Council terms for hospital medical staff. Single furnished quarters will be available, subject to appropriate deductions. Facilities are available for studying for the D.P.M.

Applications, giving particulars, and names and addresses of 2 referees, to be addressed to the Physician-Superintendent, Mendip Hospital, Wells, Somerset.

WELSH REGIONAL HOSPITAL BOARD.

REGISTRAR (psychiatry), Morgannwg Hospital, Bridgend (all modern treatments, active outpatient clinics, Child Guidance Clinic, and Psychological Department). Accommodation available.

REGISTRAR (general surgery), based West Wales General Hospital, Carmarthen. Resident.

Subject to review end of first year.

Application forms from Senior Administrative Medical Officer, Temple of Peace, Cathays Park, Cardiff, within 14 days.

WHITEHAVEN HOSPITAL, Cumberland. (124 Beds, plus 27 beds in Annexe.) HOUSE SURGEON, with orthopædic and casualty duties. (Recognised pre-registration, Senior House Officer grade if appropriate.) Vacant now.

Detailed applications, with dates and copies of 2 testimonials, to Group Secretary, Workington Infirmary, Cumberland.

WINDSOR. KING EDWARD VII HOSPITAL. House PHYSICIAN (Male or Female) required (not pre-registration). Applicants required to be members of a Medical Protection Society.

Applications, stating age, qualifications with dates, and nationality, together with copies of 3 recent testimonials, to Hospital Secretary, by 20th May.

WOKINGHAM. PINEWOOD HOSPITAL. Registrar in Diseases of the Chest required at above Hospital. Hospital has 248 Beds and contains a Thoracic Surgical Unit. Post gives valuable experience in medical and surgical treatment of pulmonary tuberculosis and is suitable for a candidate working for higher qualification. Hospital may be visited by direct appointment.

Application forms obtainable from, and returnable to, Secretary, Windsor Group Hospital Management Committee, Alma-road, Windsor, by 20th May.

WOLVERHAMPTON GROUP.

The Royal Hospital (an Associated Hospital of the University of Birmingham Medical School)

HOUSE OFFICER (casualty), vacant 9th June.

Wolverhampton Eye Infirmary (100 Beds and busy Outpatient Department. Recognised for F.R.C.S. and D.O.M.S. examinations)

HOUSE OFFICER.

Apply, with copies of testimonials, to Secretary, The Royal Hospital, Wolverhampton.

WIGAN. ROYAL ALBERT EDWARD INFIRMARY. (200 Beds.) SENIOR HOUSE OFFICER in Orthopædic Surgery required.

Applications to Secretary, Wigan Infirmary.

WIGAN (near). WRIGHTINGTON HOSPITAL. Registrar required (resident). Regional centre for orthopædic tuberculosis. 200 adults and 100 children. £850 (first year) £965 (second year), less £140 for board.

Apply to Consultant Surgeon-Superintendent with references.

YORK. THE RETREAT. Locum Psychiatrist (Senior Registrar grade) required for The Retreat, York, for 6 months.

Apply, with names of 2 referees, to the Physician-Superintendent.

YORK. MATERNITY AND FULFORD HOSPITALS. SENIOR HOUSE OFFICER in Obstetrics and Gynæcology required 17th June, 1955. Recognised for M.R.C.O.G.

Applications, stating age, qualifications, experience, nationality and names of 2 referees, to the Secretary, York A and Tadcaster Hospital Management Committee, Bootham Park, York.

YORK. COUNTY HOSPITAL. (Modern General Hospital of 269 Beds with full Consultant staff.) RESIDENT HOUSE SURGEON (pre-registration or registered), required immediately. Recognised for F.R.C.S.

Applications, giving age, qualifications, experience, nationality, and names of 2 referees, to the Secretary, York A and Tadcaster Hospital Management Committee, Bootham Park, York.

YORKSHIRE. EAST RIDING HOSPITAL MANAGEMENT COMMITTEE.

Broadgate (Mental) Hospital, Beverley, Yorks (650 Beds) JUNIOR HOSPITAL MEDICAL OFFICER required.

Facilities for study. A flatlet is available in the Hospital.

Detailed applications to Group Secretary, Westwood Hospital, Beverley.

YORKSHIRE. EAST RIDING HOSPITAL MANAGEMENT COMMITTEE.

Westwood Hospital, Beverley, Yorks (220 Beds) ORTHOPÆDIC HOUSE SURGEON (first, second, or third post). Offers good opportunity for general experience in busy acute general hospital. Approved pre-registration post. Fully qualified practitioners may apply. Recognised for F.R.C.S.

Apply to Group Secretary.

U.S.A. BRIDGEPORT HOSPITAL, Bridgeport, Connecticut. Approved ROTATING INTERNSHIPS available in a general hospital of 387 Beds and 60 bassinets; approved residencies in medicine, surgery, obstetrics, pathology, radiology, and anesthesiology. Stipend of $190 per month in addition to full maintenance and uniforms. Exchange-visitor programme participant (P–619).

Address inquiries to Chairman, Committee on Medical Education of Interns and Residents, Bridgeport Hospital, Bridgeport, 10, Connecticut, U.S.A.

Public Appointments

BURTON UPON TRENT. COUNTY BOROUGH OF BURTON UPON TRENT. Applications are invited from registered medical practitioners for the post of ASSISTANT MEDICAL OFFICER OF HEALTH AND SCHOOL MEDICAL OFFICER. The duties will be mainly maternity and child welfare and school medical inspections, but the Officer appointed will also obtain experience in environmental hygiene, housing and mental health services. The possession of a D.P.H. or D.C.H. is desirable but not essential. The salary will be within the scale of £950 p.a. rising by annual increments of £50 to £1300 p.a., the point of entry to be fixed according to the experience and qualifications of the successful candidate. This salary scale will be reviewed in the light of any Whitley Council decision which may be announced. If required, a Corporation house will be available for occupation by the successful candidate at an agreed charge. A car allowance in accordance with the Council's scale will also be payable to the successful candidate. The appointment will be subject to the provisions of the appropriate superannuation act, to determination by 3 months written notice on either side at any time and to the successful candidate passing a medical examination.

Applications to be made to the undersigned, stating the names of 3 persons to whom reference may be made, not later than Monday, 23rd May, 1955. Further particulars may be obtained from the Medical Officer of Health (Dr. Robert Mitchell), Town Hall, Burton upon Trent.

H. BAILEY CHAPMAN, Town Clerk.

Town Hall, Burton upon Trent, 6th May, 1955.

FIFE COUNTY COUNCIL. Health and Welfare Department. Applications are invited from registered medical practitioners (Male) for appointment as Whole-time ASSISTANT MEDICAL OFFICER in the Cowdenbeath Area. Inclusive salary £1050–£50–£1400 p.a. Large modern Child Health Clinic recently opened and duties will entail supervision, clinical work and cooperation with General Medical Practitioners and Specialists. Experience in: (1) maternity and child welfare work; and (2) School Health Service, an advantage, also possession of D.C.H. or similar qualification. Age preferably under 45. Medical examination for admission to the Council's superannuation scheme.

Applications, stating age, whether married or single, qualifications and full details of training and experience, together with the names of 3 referees, to be submitted to the County Medical Officer, County Buildings, Cupar-Fife, not later than 15 days from the appearance of this advertisement. No canvassing.

MATTHEW POLLOCK, County Clerk.

County Buildings, Cupar-Fife.

NOTTINGHAM. CITY OF NOTTINGHAM EDUCATION COMMITTEE. Applications are invited for the post of SCHOOL MEDICAL OFFICER on the salary scale £950–£50–£1300 p.a. The appointment will be subject to the provisions of the Local Government Superannuation Acts.

Further particulars and forms of application may be obtained from the Principal School Medical Officer, 28, Chaucer-street, Nottingham. F. STEPHENSON, Director of Education.

NOTTINGHAMSHIRE COUNTY COUNCIL. Arnold URBAN DISTRICT COUNCIL. CARLTON URBAN DISTRICT COUNCIL. Mixed appointment. Applications are invited from registered medical practitioners for the mixed whole-time appointment of ASSISTANT COUNTY MEDICAL OFFICER AND MEDICAL OFFICER OF HEALTH of the Arnold and Carlton Urban Districts. Applicants must have had at least 3 years professional experience since qualifying; be experienced in the duties of Medical Officer of Health, School Medical Officer, and the care of mothers and young children and possess a Diploma in Public Health.

Salaries are in accordance with Awards 2285, 2231 and 2452 of the Industrial Court for Public Health Medical Officers holding mixed appointments, namely:—

(*a*) As Assistant County Medical Officer (16/44ths) £500 p.a.–£22 14s. 6d.–£590 18s. (on scale £1100–£50–£1300, plus loading in accordance with Spens Formula).

(*b*) As Medical Officer of Health Arnold Urban District (12/44ths) £422 14s. 6d.–£13 12s. 9d.–£477 5s. 6d. (on scale £1450–£50–£1650, plus 12/44ths of £100).

(*c*) As Medical Officer of Health Carlton Urban District (16/44ths) £563 12s. 9d.–£18 3s. 8d.–£636 7s. 5d. (on scale £1450–£50–£1650, plus 16/44ths of £100).

Application forms and conditions of appointment are obtainable from my office, and applications should reach me by 4th June, 1955. Canvassing disqualifies.

A. R. DAVIS, Clerk of the County Council.

Shire Hall, Nottingham.

NOTTINGHAMSHIRE COUNTY COUNCIL. Public HEALTH DEPARTMENT. Applications invited from registered medical practitioners (either sex) for either of the following whole-time appointments:—

SENIOR CLINICAL MEDICAL OFFICER.

Salary within the scale £1150–£50–£1400, subject to a maximum commencing salary of £1300 p.a.

Applicants should:—

(*a*) Possess the D.P.H., D.C.H., or comparable qualification.

(*b*) Have had at least 3 years experience as whole-time Clinical Medical Officer in the Antenatal, Child Welfare and School Health Services of a Local Authority since July, 1948.

(*c*) Have been approved by Ministry of Education for, and have had substantial experience in, the ascertainment of educationally subnormal children.

ASSISTANT COUNTY MEDICAL OFFICER.

Salary £950–£50–£1300, or, if holding a Diploma in Public Health, £1100–£50–£1300.

Application forms and conditions of appointment from the County Medical Officer, County Hall, Trent Bridge, Nottingham. Applications by 31st May, 1955.

A. R. DAVIS, Clerk of the County Council.

LEEDS. CITY OF LEEDS. Public Health Department. Applications are invited from suitably qualified and registered Male or Female medical practitioners for the post of ASSISTANT MEDICAL OFFICER for general work in the Public Health Department. The duties of the appointment will include epidemiological work in connection with immunisation and infectious diseases control, medical supervision of a long-stay children's home for tuberculosis contacts, and a certain number of Maternity and Child Welfare Clinic sessions. The Medical Officer appointed will work under the immediate direction of the Medical Officer of Health and his Deputy. Salary scale £950 p.a., rising by annual increments of £50 to a maximum of £1300. In determining the commencing salary, due consideration will be given to previous experience and qualifications. The first increment will take effect on 1st April following the completion of 6 months satisfactory service. The person appointed will be required to pass a medical examination and to contribute to the superannuation fund established under the Local Government Superannuation Acts, 1937–53.

Applications, endorsed "Assistant Medical Officer," must be delivered at the Public Health Department, 25, East-parade, Leeds, 1, not later than 10 A.M. on Monday, 30th May, 1955. Canvassing in any form, either directly or indirectly, will be a disqualification. I. G. DAVIES, Medical Officer of Health.

TREASURY MEDICAL SERVICE. Applications are invited from medical practitioners, practising in the districts detailed below, for appointment, in a part-time and mainly advisory capacity, as LOCAL TREASURY MEDICAL OFFICER for each of the places or groups of places shown. The town shown in brackets after the place-names indicates the Head Post Office Area in which the place, or group of places, is situated. Successful applicants will be required to examine and report on the condition of certain Government Officers, teachers, candidates for appointment, &c., who may be referred to them from time to time; and to attend when summoned to an emergency case of accident or sudden illness occurring in a Government office in the neighbourhood. Fees for this work, and mileage allowance where necessary, will be paid on a scale agreed with the British Medical Association.

Intending applicants should write, within 14 days, to Treasury Medical Adviser, Treasury Chambers, Whitehall, S.W.1, for a form on which application may be made. Applicants should be not more than 60 years of age.

The places for which applications are invited are as follows:—

ENGLAND AND WALES

Odiham (Basingstoke).
Harleston (Diss).
Ilfracombe (Ilfracombe).
Harrietsham and Lenham (Maidstone).
Yarmouth, Isle of Wight (Newport, Isle of Wight).
Cosham (Portsmouth and Gosport).
Rochdale (Rochdale).

NORTHERN IRELAND

Lisburn (Lisburn).

SCOTLAND

Bo'ness (Bathgate).
Dunoon, Sandbank and Innellan (Dunoon).
North Berwick (North Berwick).

GOVERNMENT OF UNITED KINGDOM OF LIBYA. Applications are invited for the appointment of a PATHOLOGIST AND BACTERIOLOGIST in the Medical Department under the Provincial Administration of Cyrenaica. Salary £1200–£35–£1375 p.a., plus tax-free expatriation allowance of £220–£530 p.a., according to individual circumstances. Salary not liable to British income-tax (Schedule E) but there is a local tax of 8%. Appointment subject to medical fitness and initial contract would be for 2 years.

Main provisions of agreement are :—

(*a*) A provident fund exists under which both the Administration and the Official are required to contribute a sum equivalent to 7½% of official's salary, the total being paid to the official on expiration of contract.

(*b*) 72 days home leave are granted at the end of 2 years resident service.

(*c*) Passages for the official and his family on first appointment and on leave journeys are at Government expense.

Age limit 40 years.

Write, giving full particulars of experience and qualifications, and the names of 3 referees, to the Secretary, Division 5A, Ministry of Health, Savile-row, London, W.1. Applications should be submitted within 10 days of the date of this advertisement.

RHONDDA URBAN DISTRICT COUNCIL AND GLAMORGAN COUNTY COUNCIL. Mixed appointment of DEPUTY MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER. Applications are invited from suitably qualified Men under the age of 50 years for the pensionable mixed appointment as above, at an aggregate salary under Awards 2285 and 2321 of the Tribunal of £1119 6s. 3d., rising to £1465 18s. 1d. p.a.

Form of application and further particulars from the undersigned. Closing date 10th May, 1955, at NOON.

D. J. JONES, Clerk of the Council.

The Council Offices, Pentre, Rhondda, Glam., 25th April, 1955.

SUDAN GOVERNMENT. The Sudan Ministry of Health invites applications for the posts of Male SPECIALIST PHYSICIANS, SURGEONS, and GYNÆCOLOGISTS. Candidates must possess adequate professional qualifications for the type of post, viz., M.R.C.P., F.R.C.S., or M.R.C.O.G., or internationally recognised equivalents. Age should be 28–43. Appointment will be on short-term contract (with bonus) for a period of up to 5 years. Salary scale ranges between £E1750 and £E2330 for Junior Specialists (annual increases) or a fixed rate of £E2500 p.a. for Specialists. Starting rate of pay is fixed according to age, qualifications, and experience. Outfit allowance of £E50 is payable when the contract has been signed. Free passage on appointment. Annual leave after the first tour.

Further particulars and application forms can be obtained from Dr. E. P. PRATT, 93, Harley-street, London, W.1.

YORKSHIRE. COUNTY COUNCIL OF THE WEST RIDING OF YORKSHIRE. Joint appointment of SENIOR ASSISTANT COUNTY MEDICAL OFFICER AND SCHOOL MEDICAL OFFICER to the Morley and Ossett Corporations, Horbury Urban District, Wakefield Rural District, and the West Riding County Council. Applications are invited from registered medical practitioners (Men or Women), for the above post. The Senior Assistant County Medical Officer and School Medical Officer will be on the staff of the County Medical Officer's Department but will work under the administrative direction of the Divisional Medical Officer and the Medical Officer of Health, who is responsible for the day to day administration of practically all public health matters in the Division, and the post is suitable for Medical Officers who hold the D.P.H. and wish to obtain further experience in the field of public health. The duties of the office will be mainly clinical in the School Health and Infant Welfare Services, but in addition to these duties the person appointed will be required to act for the Divisional Medical Officer and Medical Officer of Health in his absence. The scale of salary is at present £1050 p.a., rising by annual increments of £50 to £1400 p.a. Travelling and subsistence allowances according to the County Council's scale are payable in addition to salary. The post is superannuable and the successful applicant will be required to pass a medical examination as to physical fitness.

Forms of application can be obtained from the undersigned to whom they should be returned not later than 21st May, 1955.

J. WOOD-WILSON, County Medical Officer.

County Hall, Wakefield.

YORKSHIRE. COUNTY COUNCIL OF THE WEST RIDING OF YORKSHIRE. Appointment of ASSISTANT COUNTY MEDICAL OFFICER AND SCHOOL MEDICAL OFFICER. Applications are invited from registered medical practitioners (Men or Women), for posts in the following areas :—

Division No. 8. Harrogate Borough, Knaresborough Urban District, and Nidderdale Rural District.

Division No. 23. Hemsworth Urban District and Hemsworth Rural District.

Division No. 31. Maltby Urban District, Kiveton Park and Rotherham Rural Districts.

The Assistant will be on the staff of the County Medical Officer's Department but will work under the administrative direction of the Divisional Medical Officer for the area. The duties will be mainly clinical in the School Health and Infant Welfare Services, but other County health duties may be included by the Divisional Medical Officer. The scale of salary is £950 p.a. rising by annual increments of £50 to £1300 p.a. A Diploma in Child Health, although not essential, will be an advantage. Travelling and subsistence allowances according to the County Council's scale are payable in addition to salary. The posts are superannuable and successful applicants will be required to pass a medical examination as to physical fitness.

Forms of application can be obtained from the undersigned, to whom they should be returned not later than 21st May, 1955. J. WOOD-WILSON, County Medical Officer.

County Hall, Wakefield.

STOKE-ON-TRENT. CITY OF STOKE-ON-TRENT EDUCATION COMMITTEE. Applications are invited from fully qualified and registered medical practitioners for the post of ASSISTANT SCHOOL MEDICAL OFFICER. Salary scale £950–£1300 p.a. by annual increments of £50. The duties will consist of routine medical inspections in schools and clinic work. Holidays as school holidays. The appointment is subject to the provisions of the National Health Service superannuation regulations and is terminable by 1 months notice on either side. The successful candidate will be required to pass a medical examination.

Form of application, which may be obtained from the undersigned, should be completed and returned as soon as possible.

H. DIBDEN, Chief Education Officer.

Town Hall, Hanley, Stoke-on-Trent.

General Practice

For an Executive Council post (England and Wales) apply on form E.C.16A obtainable from the council. Mark envelope "Vacancy."

STOCKPORT, CHESHIRE. Applications are invited for VACANCY (urban) due to resignation. List approximately 2900. Residence and surgery available by purchase. Apply on Form E.C.16A before 21st May, 1955, to—

W. HAMMOND, Clerk, Stockport Executive Council.

13, Greek-street, Stockport.

Hospital Services : Non-Medical Appointments

HERTFORD COUNTY HOSPITAL, Hertford, Hertfordshire. (173 Beds. 20 miles from London.) Applications are invited for the post of MEDICAL LABORATORY TECHNICIAN who must be qualified and well experienced in pathological histology. Whitley Council salary and conditions of service.

Apply, giving details of age, qualifications, experience and names of 2 referees, to the Hospital Secretary.

Miscellaneous

To non-professional posts the Notification of Vacancies Order 1952 applies.

Certified Pathologist to handle work in a 226-Bedded General Hospital in Northern Ontario, city of 50,000 population. Expected remuneration $10,000–$12,000, plus limited outside work.—Address, No. 129, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

For excellent training opportunities and promising careers for Pathologists in the United States of America contact Dr. E. VON HAAM, Chairman, Department of Pathology, Ohio State University Medical Center, Columbus 10, Ohio.

Darbishire House Health Centre. Wanted, G.P. Locum, immediately for 4 months. Own car essential. Usual fees.—Applications to the Secretary, Darbishire House Health Centre, Upper Brook-street, Manchester, 13.

Secretary/Nurse. Young lady 24, hospital training, desires position with Dentist or Doctor. Happy personality.—VAN HASSELT, Wilmar, Burntwood-road (Sevenoaks 3739).

Experienced teacher of Alexander Technique wishes to contact interested doctor with a view to research on its effects in selected cases.—Address, No. 132, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

Manitoba, Canada. Practice for disposal, also house and furniture if required. Substantial income. Good scope. Premium by negotiation with ARTHUR SHAW, Medical Agent, Premier Buildings, 88, Church-street, Liverpool, 1.

South Australia. Practice and house for disposal. Average gross income £3500 p.a. Furniture if required. Premium by negotiation. Further particulars, ARTHUR SHAW, Medical Agent, Premier Buildings, 88, Church-street, Liverpool, 1.

Multitone Hearing Aid for sale unused. Cost £40, accept £25.—Address, No. 131, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

Typewriting and Duplicating. First-class work at moderate prices by experienced medical typists.—SYBIL RANG, 21, Heath-street, Hampstead, London, N.W.3 (HAM, 5329/0504).

Applicants for posts requiring testimonials copied or duplicated should communicate with MANTON SECRETARIAL SERVICE LTD., 98, Victoria-street, S.W.1 (Phone : VICtoria 0141), who are specialists in this kind of work.

Binocular Microscope with Centring Mount and Harwood Case, pr. Eyepieces, X6 ; pr. Eyepieces, X10. Objectives 2/3 in., 1/8 in., 1/6 in. 1/12 in. Quadruple Nosepiece. Achromatic Condenser. Dark Ground Condenser, with funnel stop and adapter. pr. Compensating Eyepieces X15. New, unused, is for sale.—Box B.3152. W. H. SMITH & SON LTD., Manchester, 3.

"Pregnancy Diagnosis by the Xenopus Method," 24-hour service. Send specimen of urine and £1 1s. fee. Hæmatology, Biochemistry, Flame Photometry.—WELBECK BIOLOGICAL LABORATORIES, 26, Park-crescent, Portland-place, W.1 (MUSeum 5386–7).

Austin. The New Show Models A.30, A.40, A.50 and A.90. Limited number of orders acceptable from proven essential users, —Application form, brochures, easy terms, from Austin House, 140–144, Golders Green-road, Golders Green, London, N.W.11.

Family Planning Association.

Sub-fertility Centre. Investigation and advice on treatment of sub-fertility problems. Patients accepted only through doctors, hospitals and clinics.

Pregnancy Diagnosis. Specimens of urine accepted for testing (Hogben Test) from doctors, hospitals and clinics anywhere. Results available within 24 hours of receipt of specimen.

Telephone or write for details : Family Planning Association, 64, Sloane-street, London, S.W.1 (SLOane 9112).

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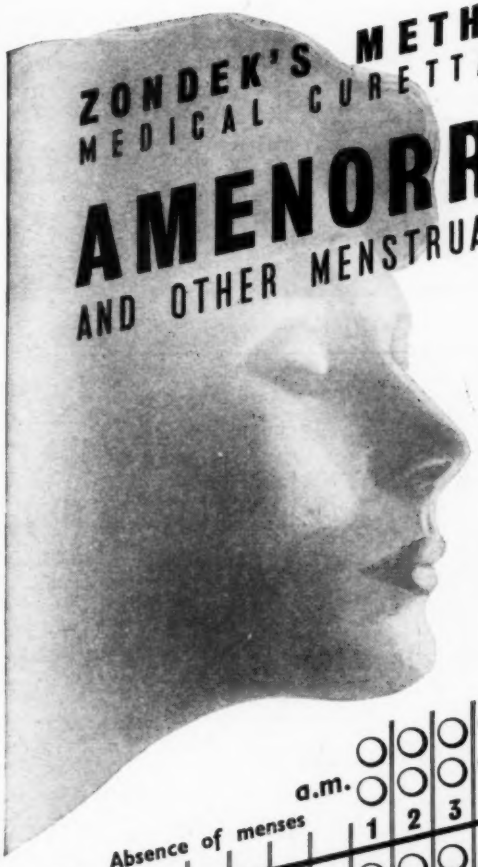

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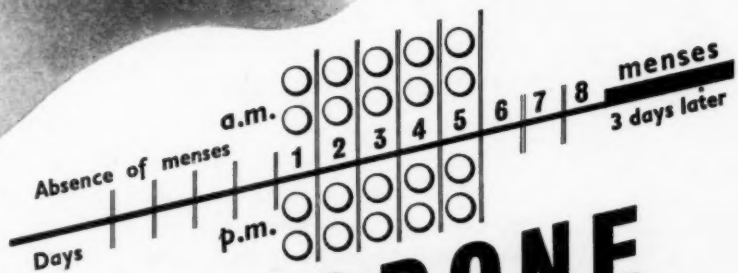

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